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THE DEPARTMENT OF ENERGY'S SUPPORT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL), PARTS I & II

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON INVESTIGATIONS AND
OVERSIGHT

AND THE

SUBCOMMITTEE ON ENERGY AND ENVIRONMENT

COMMITTEE ON SCIENCE AND
TECHNOLOGY

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

JULY 19, 2007
and
AUGUST 1, 2007

Serial No. 110–45
and
Serial No. 110–50

Printed for the use of the Committee on Science and Technology

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THE DEPARTMENT OF ENERGY'S SUPPORT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL), PART I

TUESDAY, JULY 17, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, DC.

The Subcommittees met, pursuant to call, at 10:05 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Brad Miller and Honorable Nick Lampson [Chairman of the Subcommittee on Investigations and Oversight] presiding.

BART GORDON, TENNESSEE
CHAIRMAN

RALPH M. HALL, TEXAS
RANKING MEMBER

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THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
AND
THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

JOINT HEARING ON

THE DEPARTMENT OF ENERGY'S SUPPORT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL), PART I

July 17, 2007
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

WITNESS LIST:

PANEL I

The Honorable John Barrow (D-GA)

PANEL II

Dr. Paul M. Bertsch [NOT HEARD]
Former Director, Savannah River Ecology Laboratory, the University of Georgia

PANEL III

Dr. Jerald L. Schnoor
Professor, Civil and Environmental Engineering, and Co-Director, Center for Global & Regional Environmental Research, the University of Iowa

Dr. F. Ward Whicker
Professor, Radiological Health Sciences, Colorado State University

JOINT HEARING CHARTER

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
and the
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

The Department of Energy's Support for the Savannah River Ecology Laboratory (SREL), Part I

TUESDAY, JULY 17, 2007
10:00 A.M.–12:00 P.M.
2318 RAYBURN HOUSE OFFICE BUILDING

Purpose:

The purpose of the hearing is to examine the past and current work of the Savannah River Ecology Laboratory (SREL), its relationship to the Savannah River Site and the Communities bordering the Site, and the events leading to the Department of Energy's decision to withdraw funding for the laboratory in fiscal year 2007.

Background:

SREL was established in 1951 to track the ecological changes and environmental consequences of establishing nuclear weapons production facilities on the Savannah River Site (SR or SRS). It is unique within the DOE complex because it is the only lab that is not "owned" by DOE. Rather, the University of Georgia founded the lab and has always had a relationship with DOE that has allowed them to be present on the site and funded by the Department (and the Atomic Energy Commission before DOE was established).

SREL has been a very productive scientific lab with a distinguished record of publication and an amazing amount of unbroken data sets on the ecology of the site. While the site itself was a center for weapons production and contains enormous amounts of waste, with ongoing waste processing that will stretch out for a generation or longer, it is also an enormous physical site—much of which includes pristine environmental conditions. Largely untouched by development, the Savannah River site hosts the most diverse and complex ecology in North America and contains all representative ecosystems of the southeastern U.S.

Recognizing these unique features of the site, in 1972 the Atomic Energy Commission created the first National Environmental Research Park (NERP) located within the DOE complex at Savannah River. There are seven NERPs located at DOE sites around the country. SRS has 30 set-aside areas where no development of any kind is allowed to go forward. SREL has monitored the ecology in these set-asides ever since they were established. Another facet of the SREL work in the NERP is that they are a major way that the Savannah River Site carries out its "stewardship" responsibilities—to show to the Nation that they are caring for the site in a way that justifies their occupation of the land at these sites. The *National Environmental Policy Act* (NEPA) established environmental protection as a mission of all federal agencies. SREL has carried out this function through very successful public education programs to bring the public and students to the site and show them the unique qualities of the ecology there.

SREL also collects data that is used by the site to demonstrate its compliance with a number of environmental laws. IF SREL does not provide these data as part of their base work, the site will have to hire a contractor to collect that information. The communities that border the site in Georgia and South Carolina and that are located downstream from the site also rely on the lab to be a trusted, independent voice that will tell them the truth about the nuclear wastes on the site, the remediation activities on the site, and the safety of being near or downstream from it.

DOE Funding and Cooperative Agreement with SREL and University of Georgia:

The Bush Administration's budget requests for SREL have varied considerably, but with a general downward trend since FY 2002. The first budget they composed, for FY 2002, included a 30 percent cut in the request for the lab by Environmental Management (EM). Then in FY 2003 and FY 2004, the lab's funding line was moved to the Office of Science accounts and did well (requests of around $8 million). In FY 2005 the budget request eliminated all funding for the lab. The Georgia and South Carolina delegations secured funds in the FY 2005 appropriation to reverse this decision. These delegations met with DOE and an agreement was made that the Administration would fund the lab at $4 million in FY 2006 with $1 million coming from Science and $3 million coming from DOE. It is with that deal that the path to closing the lab begins. What follows is largely based on the documentary record provided to the Subcommittees by the Department of Energy, SREL and the University of Georgia (UGA).

Negotiations Begin on a New Cooperative Agreement—May 2005:

SREL and UGA's existing cooperative agreement was to expire in July, 2006. In May 2005, the Department hosted a meeting involving then-Assistant Secretary for Congressional and Intergovernmental Affairs, Jill Sigal, other DOE staff, representatives from the University of Georgia and SREL, and representatives from the Georgia and South Carolina delegations. The Department did not want to face an ongoing string of appropriations earmarks and the delegations wanted some agreement that the lab would be supported. That meeting led to an agreement that in FY 2006 the Department would provide $4 million (plus some money from the National Nuclear Security Administration—NNSA) and in FY 2007 it would provide at least $1 million from EM accounts.

There is disagreement about whether $1 million was a cap or a floor, but there was ample discussion at that meeting about the perceived need for the SRS to use SREL to further their mission. Director Bertsch said that as long as he could pursue money from the programs on the site in addition to EM funding he would be able to keep the lab going. Jill Sigal requested that Dr. Bertsch put together a plan to show how he would do that, and so the day after the meeting, Dr. Bertsch forwarded a business plan that included the work SREL would undertake that was needed by the site. He was never told the plan was unacceptable. In fact, a subsequent memorandum from the Principal Deputy for Environmental Management, Charlie Anderson, directed the SR site manager for DOE to negotiate a new five-year cooperative agreement. The memo drew extensively from Dr. Bertsch's business plan. The Director of the SRS, Jeff Allison, then informs Bertsch that he has been directed to negotiate a new cooperative agreement. Bertsch and Allison work on this for over a year.

In March of 2006, even as negotiations continue, Mr. Allison tells Dr. Bertsch to budget for $4 million at SREL from SRS/EM in the FY 2007 budget. When they reach agreement on a new cooperative agreement, it provides for $4 million a year from 2007 through 2011 with a 2.5 percent escalator to allow for inflation. The agreement is sent up to DOE Headquarters for notification in August of 2006 and then again (due to an imperfection in the process) in September 2006. If Headquarters had approved it, Allison would have been authorized to sign the agreement. However, the agreement was never approved at Headquarters.

The Cooperative Agreement is Not Approved and Negotiations Begin Again—September 2006

Instead negotiations are re-opened with new criteria for the cooperative agreement. Deputy Secretary, Clay Sell, was briefed and he determined—supposedly with the approval of the Secretary—that the new agreement would provide $1 million of guaranteed funding in FY 2007 plus additional funding on a task-by-task basis.

The initial reaction from SREL was that this offer would lead to the closure of the lab, but the SR Site Director, Jeff Allison, assured SREL their work was needed by the site and he would fund their tasks using funds the site Director has discretion over to award for site-based projects. DOE Headquarters was aware of the assurance provided by Mr. Allison to SREL.

SREL then enters into negotiations once again to secure a new cooperative agreement. From September 2006 through November 2006, Dr. Bertsch was working with SRS assistant managers to identify the projects the site would fund to meet $3 million in identified needs. At the same time, DOE Headquarters officials were scrutinizing the language of the cooperative agreement. Headquarters was insisting on highlighting language that emphasized funds were subject to "need, merit and availability of funds." They also included a provision that any funds could be subject to a “technical peer review.” Bertsch believed this would be the kind of review his programs had been through many times in the past—where evaluators look at the sweep, mix and quality of science being done by the lab. However, DOE had something else in mind that was not made clear to the lab until months after the agreement was signed on December 1, 2006.

New Funding Criteria are Established by Headquarters and Funding is Denied—February 2007

In January of this year, Dr. Bertsch and SREL believed they had a new cooperative agreement that made them financially stable. The site Director repeatedly assured SRS that they needed the SREL’s work and he had the money to fund it (his budget for FY 2007 had $4.1 million identified for SREL). However, in February, DOE Headquarters announced there would be a task-by-task peer review process for all of the items that SREL has proposed. The standard for this “peer review” was established by Headquarters—tasks must be deemed “mission critical in FY 2007.”

As it turns out, almost nothing meets this standard at Environmental Management. EM’s primary mission is clean-up. Establishing a metric for a project that requires progress on clean up within six months—because by April or May of 2007, the fiscal year is half-over—ensures that no projects done by a research lab will meet the criteria. On May 7, SREL is informed that only $800,000 of its proposed $3 million in work would be funded. This process was led by Headquarters in the sense that HQ invented the review process and established the standard. The site was left to carry out the directions of Headquarters.

The Department asserts they were living up to the terms of the cooperative agreement of providing $1 million plus projects deemed to be “needed.” The Department also embarks on a campaign of lies and distortions that can be tracked in the letters sent to Mr. Barrow and to the Subcommittee Chairmen. DOE portrays the lab management as having been lazy for not seeking out more non-DOE funding and the University as neglectful of management at the lab. There are rumblings that EM may ask for an IG audit of the books at SREL. As to whether the lab closes or not, the Department says that is entirely up to the University and the Department has nothing to do with that—as if their funding decision and prior promises were irrelevant to the situation at the lab.

Subcommittees of the Committee on Science Begin Their Investigation—May 2007

The Subcommittees sent a letter to DOE within 10 days of Dr. Bertsch receiving notice that funding was not to be continued. The University of Georgia announced it was extending lab personnel’s salaries through the end of June—even though DOE money would run out at the end of May. The University decided not to formally close the lab, but 40 people had their last day at the lab on June 29—some who had been there over 20 years. Approximately 30–40 more are being moved back to the University campus in Athens, GA in one capacity or another. The remaining 30–40 will stay on site to carry out work funded through grants already in place from other agencies. The future of the lab and the long-term data sets it maintains is unclear unless DOE restores funding for its work. Without that core funding, the lab cannot continue to operate. Dr. Bertsch was asked to resign by the University at the request of the Secretary of Energy, Mr. Bodman. Bertsch’s ten-year run as Director ended because it appears the Department resented efforts by SREL to explain to the Congress and the public that they were on the edge of being closed.

Witnesses:

Panel I

Representative John Barrow (GA) represents the Georgia communities that border the Savannah River Site.

Panel II

Dr. Paul Bertsch is the former Director of the Savannah River Ecology Laboratory. Dr. Bertsch is a fact witness to every major action regarding this lab from May 2005 until his forced departure in June 2007.

Panel III

Dr. Jerry Schnoor, University of Iowa, is an expert in sub-surface science and engineering. He is Editor of the *Journal of Environmental Science and Technology* and a member of the National Academy of Engineering. Dr. Schnoor will testify to the quality of the work done at SREL on remediation and sub-surface fate and transport of pollutants.

Dr. Ward Whicker, Colorado State University, is a radio-biologist and the winner of the Department of Energy's prestigious Lawrence Prize. He has done research on the Savannah River site and is very familiar with the importance of SREL's research to the wider scientific community and to State regulators. Dr. Whicker will also discuss the importance of the surface science work involving animal populations on the site done by the lab.

Chairman MILLER. Good morning. This hearing will come to order. This is a hearing of both the Subcommittee on Investigations and Oversight and the Subcommittee on Energy and Environment of the Science and Technology Committee. We will have another hearing that is a joint hearing of the two Subcommittees on Thursday of this week.

Today's hearing is entitled *The Department of Energy's Support for the Savannah River Ecology Laboratory, Part I.* An enormous amount of effort has gone into undermining support for a very small but very important independent laboratory. The Savannah River Ecology Lab, housed at the Savannah River Nuclear Site since 1931, and run by the University of Georgia, has an impressive record of scientific contributions to environmental sciences.

Headquarters staff the Department of Energy, right up to the former head of Congressional and Intergovernmental Affairs, the current Deputy Secretary, and the Secretary himself, have all played a role in trying to eliminate funding from the Department of Energy for the lab.

The overall budget of the Department of Energy is $26 billion. The total funding for the laboratory has been about $4 million. I certainly don't want to say that $4 million is too little an amount for the Executive Branch to sweat. We certainly want them to be concerned about amounts of that size, but to give you a benchmark or a point of comparison, a few weeks ago we heard that the Administrator of NASA spoke to the Inspector General's staff and told them not to bother with investigations except investigations into fraud and only investigations in fraud that would result in savings of at least a billion dollars. Less of that just wasn't worth the trouble.

So it is curious that the Department of Energy, with a $26 billion a year budget, has spent so much attention on an independent lab that receives about $4 million a year in funding. And why, the question becomes, why?

The question could also be asked by this committee. Why are we holding this hearing, and it is Part I. There will be further hearings on this laboratory, and the reason for our interest is that we care that, although the lab is small, the amount being expended is small relative to the federal budget, the scientific importance of the lab has been enormous. It has certainly been enormous in the work that they do in radiation measurements and detecting the effect of radiation at a time when we are worried about a dirty bomb as the most likely form of a terrorist attack. It is certainly important when we are looking at almost certainly relying more on nuclear energy in the near future than we have. The importance of a lab that does ecological research into the effect of radiation is very important.

Scientific research has been the core mission of the lab for most of its 51 years. It is hard to put a price tag on the value of the lab's research. The lab has contributed to the mission of the Department of Energy on the site in very direct ways. The documents that we will enter into the record today and the story of the former Director, Dr. Paul Bertsch, will tell, the story they will tell will make it abundantly clear that the Department managers at the site value the lab for all of its contributions. And the lab does play an essential role in the Savannah River Site's need to meet environmental regulatory compliance requirements. Compliance requirements of the actual *Environmental Policy Act,* the *Endangered Species Act,* the *Comprehensive Environmental Response Compensation Liability Act,* the *Resource Conservation and Recovery Act,* and the lab has also helped the Savannah River Site, a national environmental research park, through public education and tour efforts.

The lab conducts environmental outreach programs that, for the Department of Energy, give the site more credibility in the eyes of folks in the community around the site because it is independent, and they think they can trust what the lab has to say. In all those ways and more, the lab is essential to the functioning of the Savannah River Site, and certainly appears to be worth every bit of the $4 million dollars the Department of Energy has spent on it in the recent past.

But the folks at the Department of Energy's headquarters believe differently. They thought that the best face to put on the conduct for the Department of Energy over the last several months has been that they directed the local site manager, Jeff Allison, and his staff to negotiate with the lab in bad faith to change the rules, to change the purposes, to change the objectives frequently and to leave the lab dangling without funding to continue.

They never told the lab exactly what was happening, but they stepped in. The headquarters, DOE headquarters, stepped in to guarantee the lab would not receive the resources necessary to keep it operating. Headquarters' actions left the University of Georgia halfway through a fiscal year to figure out whether to close the lab or let it limp along to fill out remaining federal grants from other agencies. And the Department washed its hands of the outcome and misrepresented everything they have done to anyone who has asked—the public, the press, and Congress.

These conclusions are not based on hearsay. They are not based on speculation. They are based upon a review of the documents of the Department's own materials, and many of those materials are being made public today, and public scrutiny for the Department of Energy's conduct with respect to the Savannah River Lab is long overdue.

Just as an example, the tasks that the Department of Energy asked the lab to submit in February went through what was called a technical peer review. Among other places in a letter to Representative Barrow and a statement from a Department of Energy spokesman that was prominently placed in local news, supposedly went through scientific peer reviews. But no peer review of any kind ever occurred. The Department of Energy staff now concedes that. A different kind of review was done at the behest of the headquarters, one that seems unprecedented and invented solely for the occasion and solely to produce the outcome of closing the lab. The headquarters instructed the site to evaluate each task on whether it met a mission-critical need in 2007, this year. No one at the lab knew what that meant, and most of the research that they have done over their 51 years has been long-term research, not research designed to bring an immediate result.

And it appears the Department of Energy meant by that only research done to do immediate cleanup, and no other research performed at the lab was worth funding. The process appears to be designed to reach a result and, the result was to close the lab. No science lab in the country does research that pays dividends in the next six months. That is just not what science is about. A handful of people at headquarters really eviscerated the lab, a lab that is internationally renowned for work that has saved the taxpayers millions, maybe billions of dollars, and the question is, why? Why have they worked so hard to close a lab that has received $4 million a year? Is it really about the $4 million?

We will hear from the Department at our next hearing. Mr. Clay Sell has agreed to appear. He agreed to appear today, but his schedule and personal circumstances have made that impossible, so we will hear from him at a later date. I know there are some folks from the Department of Energy here today observing the hearing. We welcome you, and we hope that we do receive all the documents that we have requested in time to review them thoroughly before Mr. Sell does testify.

And we look forward to hearing the Department to explain their side of events.

I would now like to recognize Mr. Nick Lampson, distinguished Chairman of the Energy and Environment Subcommittee.

[The prepared statement of Chairman Miller follows:]

PREPARED STATEMENT OF CHAIRMAN BRAD MILLER

An enormous amount of effort has gone into undercutting the support for a very small, but very important lab. The Savannah River Ecology Lab, housed on the Savannah River nuclear site since 1951 and run by the University of Georgia, has an unparalleled record of scientific contributions to the environmental sciences.

Headquarters staff at the Department of Energy, right up to the former head of Congressional and Intergovernmental Affairs, the current Deputy Secretary and the Secretary himself, have all played a role in trying to eliminate funding from the Department for the lab. Why would any of these figures spend even one minute worrying about a $4 million a year lab when they have to manage a $26 billion a year enterprise?

The question could just as easily be put to the Committee: why do we care about the loss of such a small lab?

The answer is easy: We care because while the dollar impact of the lab is small, the scientific importance of the lab has been enormous. Scientific research, and that was the core mission of the lab for most of its fifty-one years, is not about a return on an investment today but about giving us understanding that will guide our actions tomorrow. It is hard to put a price tag on such knowledge.

The lab certainly contributed to the mission of the Department of Energy and the site in very direct ways. The documents we will enter into the record today, and the story that the former Director, Dr. Paul Bertsch, will tell makes it abundantly clear that the Departmental managers at the site valued the lab for all its contributions.

The lab plays an essential role in the Savannah River site's need to meet environmental regulatory compliance requirements under the *National Environmental Policy Act,* the *Endangered Species Act,* the *Comprehensive Environmental Response Compensation and Liability Act,* and the *Resource Conservation and Recovery Act.* The lab also has helped manage the SRS National Environmental Research Park through public education and tour efforts. The lab conducts environmental outreach programs for DOE that give the site more credibility in the eyes of the local communities because the lab is seen as being independent of the Department. In all these ways and more, the lab was essential to the functioning of the site—or at least it was so viewed by site management. And, all of that for $4 million dollars a year.

These conclusions are not based on hearsay or speculation, but a careful review of the Department's own materials. Many of those materials are being made public today and public scrutiny is long overdue.

Just as an example, the tasks that DOE asked the lab to submit in February went through a "technical peer review." In other places, including a letter to Representative Barrow and a statement from a DOE spokesperson that was prominently placed in the local press, the tasks supposedly went through scientific peer reviews. No peer review of any kind ever occurred—DOE staff admitted that to Subcommittee staff in a meeting some weeks ago.

A different kind of review was done at the behest of headquarters—one that seems unprecedented and invented solely for the situation. Headquarters instructed the site to evaluate each task to see if it met a "mission critical" need in 2007. No one at the site knew what that meant. In the environmental management offices that invented the standard, "mission critical" meant one thing—does it clean up waste right now, today, or not? If work doesn't do that, then the work is not worth funding.

It is a process designed to give one outcome and one outcome only. No science lab in the country does research that pays dividends in the next six months. That is just not what science is about. A handful of people at headquarters gutted a lab that is internationally renowned for work that has saved the taxpayer millions, maybe billions of dollars.

One question eludes us: Why?

It is hard to believe that the effort to close the lab is really about $4 million.

We look forward to Departmental witnesses joining us at a later date. Mr. Clay Sell had agreed to appear today, but personal circumstances have pulled him away. We are working to find another date before the recess where we can have the Department in to explain their conduct and their letters to the Subcommittees and the Congress.

Now, I would like to recognize Mr. Lampson, the distinguished Chairman of the Energy and Environment Subcommittee.

Chairman LAMPSON. Thank you, Mr. Chairman, Chairman Miller. I think it is excellent that our Committee on Energy and Environment joins the Subcommittee on Investigations and Oversight for this very important hearing. I certainly concur with all of the things that you have said here today and certainly we are here to attempt to solve a mystery, a mystery involving the Savannah River Ecology Laboratory, SREL, a laboratory associated with the University of Georgia and located on the Department of Energy's Savannah River Site.

What is SREL? It is a laboratory whose work has saved the taxpayers millions of dollars in remediation costs. A laboratory that has the confidence of the local communities in South Carolina and Georgia adjacent to the Savannah River Site, and the enthusiastic support of the Citizens Advisory Council associated with the site. A laboratory that has been in existence since the 1950's when the Savannah River Site was established. It was founded by one of the Nation's foremost and imminent ecologists, Dr. Eugene Odum, and it is maintained invaluable continuous long-term data sets on important animals and plants.

This laboratory in conjunction with the University of Georgia has trained hundreds of environmental scientists and has run popular and successful public education and outreach programs on the Savannah River Site. SREL has also assisted the site in its efforts to comply with federal and State environmental laws. It also manages one of the seven National Environmental Research Parks in a network of ecologically important sites that exist on DOE property across the country. The Savannah River Ecology Laboratory has provided these services to the taxpayers of this country at a cost of less than $10 million a year.

Well, this is a record of achievement that any organization would be proud of and certainly one that deserves recognition. And what is their reward for those 50 years plus of service? Well, they have certainly been recognized by the DOE headquarters. They have been, unfortunately, rewarded with a loss of funding in the middle of the fiscal year leading to layoffs and essentially the closure of the laboratory, a move that places the ongoing research and the continuity of long-term data sets in grave jeopardy. Bad faith bargaining in the renewal of a cooperative agreement with their federal partner, the Department of Energy, and the dismissal of the laboratory's director, apparently by personal request of the Secretary of Energy to the President of the University of Georgia.

I simply do not know what to make of it. I feel as if I am in the middle of Wonderland with Alice.

The callous treatment of the employees of SREL is disgraceful. Beyond the hardship inflicted on them by the sudden and unexpected job loss, this decision is absurd. It is not in the interest of the people of South Carolina and Georgia, the Savannah River Site, the Department of Energy, or the rest of this nation.

And we have witnesses with us today who will be able to begin to tell us about this laboratory, its history, and its work. Dr. Paul Bertsch, the former Director of the lab, will be able to tell us about the events of the past few years that have brought us here today.

We will hear from the Department of Energy at another hearing, but I am not confident that we will ever fully understand why the headquarters of the Department of Energy has spent a great deal of time and effort to close a world-class laboratory with an excellent record of service to the Department, to the Nation, and to the local community. I believe the ultimate reasons for this absurd and ill-advised decision may be and continue to be a mystery that will not be able to solve. Hopefully, though, we will reverse this decision and restore this laboratory so that it may continue its good work.

And I yield back the balance of my time, Mr. Chairman.

[The prepared statement of Chairman Lampson follows:]

PREPARED STATEMENT OF CHAIRMAN NICK LAMPSON

We are here today to try to solve a mystery involving the Savannah River Ecology Laboratory (SREL)—a laboratory associated with the University of Georgia and located on the Department of Energy's Savannah River Site.

What is SREL? Well it is a laboratory whose work has saved the taxpayers millions of dollars in remediation cost. A laboratory that has the confidence of the local communities in South Carolina and Georgia adjacent to the Savannah River Site and the enthusiastic support of the Citizens Advisory Council associated with the site. A laboratory that has been in existence since the 1950's when the Savannah River Site was established. It was founded by one of our nation's most eminent ecologists—Dr. Eugene Odum—and it has maintained invaluable continuous long-term data sets on important animals and plants. This laboratory in conjunction with the University of Georgia has trained hundreds of environmental scientists and has run popular and successful public education and outreach programs on the Savannah River Site. SREL has also assisted the Site in its efforts to comply with federal and State environmental laws. It also manages one of the seven National Environmental Research Parks in a network of ecologically important sites that exist on DOE property across the country. The Savannah River Ecology Laboratory has provided these services to the taxpayer at a cost of less than $10 million dollars per year.

Well, this is a record of achievement that any organization would be proud of, and certainly one that deserves recognition. And what is their reward for these 50 years of service? Well they have certainly been recognized by DOE Headquarters. They have been rewarded with a loss of funding in the middle of the fiscal year leading to layoffs and essentially the closure of the laboratory—a move that places the ongoing research and the continuity of long-term data sets in grave jeopardy; bad faith bargaining in the renewal of a cooperative agreement with their federal partner—the Department of Energy; and the dismissal of the laboratory's Director—apparently by personal request of the Secretary of Energy to the President of the University of Georgia.

I simply do not know what to make of this. I feel as if I am in the middle of Wonderland with Alice.

The callous treatment of the employees of SREL is disgraceful. Beyond the hardship inflicted on them by the sudden, unexpected job loss—this decision is absurd. It is not in the interest of the people of South Carolina and Georgia, the Savannah River Site, the Department of Energy, or the rest of the Nation.

We have witnesses with us today who will be able to tell us about this laboratory, its history and it work. Dr. Paul Bertsch, the former Director of the laboratory, will be able to tell us about the events of the past few years that have brought us here today.

We will hear from the Department of Energy at another hearing, but I am not confident that we will ever fully understand why the Headquarters of the Department of Energy has spent a great deal of time and effort to close a world-class laboratory with an excellent record of service to the Department, to the Nation, and to the local community. I believe the ultimate reasons for this absurd and ill-advised decision may be a mystery we will not be able to solve. Hopefully, we will reverse this decision and restore this laboratory so that it may continue its good work.

Chairman MILLER. Thank you, Mr. Lampson. The Chair now recognizes Mr. Sensenbrenner for an opening statement.

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman. I had a prepared opening statement that I was prepared to read into the record, but after hearing both the distinguished Chair from North Carolina and the other distinguished Chair from Texas, let me state that I am really disturbed that what appears to be a piece of bad faith on one side is being reciprocated with another piece of bad faith right here on the other side of the aisle.

The Deputy Secretary of the Department of Energy had to leave town for a funeral. We can't help those kinds of things. Sometimes we have to leave town for funerals as well, whether it is a family member or a very close, personal friend, or a mentor or something like that. And there was a request that was made at the Majority staff to postpone this hearing until Mr. Sell could come on back to be able to testify on behalf of the Department of Energy on why the decisions were made. The Majority rejected that request, and I think that that in and of itself was unfair.

Now, after hearing both Mr. Miller and Mr. Lampson's opening statement I think the purpose of the hearing is now clear. It is not to investigation the contributions of SREL, something that all of the witnesses that are here can testify to, and I think which is not at the heart of the controversy. The purpose of this hearing is to attack the Department of Energy, and specifically Deputy Secretary Clay Sell, which isn't able to be here to be able to defend itself.

Now, I have heard from the other side of the aisle that we are going to go to the expense of having a second hearing where Mr. Sell will come on in and testify some time later on. That is not really necessary, and I think the purpose of having an investigation is to be able to hear both sides of the argument.

Now, the argument I don't think is the contributions that SREL has made over the years. That really is not the issue. The issue is a disconnect between the Department of Energy people who were on site at SREL and the headquarters office of the Department of Energy that apparently made the decision to discontinue the funding.

And the attack that I have heard from both of the distinguished Chairmen can't fairly take place when DOE can't be here to defend itself. The witness did have to leave Washington to go to a funeral, and it simply is not fair for this hearing to proceed without DOE being able to be present. You know, I come to these hearings like this with an open mind, but when there is a procedural overreach, and there clearly is a procedural overreach in the case of this instance because of Mr. Sell's necessity to go to a funeral, I would ask the two distinguished Chairs to postpone this hearing so that we can hear about all these issues at one hearing. And if you don't do so, I think that shows that you folks are hell bent to hang DOE in a time when DOE cannot be there to defend itself.

And I yield back the balance of my time.

Chairman LAMPSON. May I interrupt one second?

Mr. SENSENBRENNER. I yield to the Chairman.

Chairman LAMPSON. And ask that——

Chairman MILLER. Well, and Mr. Sensenbrenner, I certainly agree that funerals of family members or close family friends or close friends is something we should respect, but what you just said I am advised by our staff is not correct. The Department of Energy did not request that the hearing itself be postponed, only that Mr. Sell be excused from appearing today.

Mr. SENSENBRENNER. Well, I am requesting, reclaiming my time. I am requesting that the hearing be postponed because I think that to use kind of a tried phrase that we hear on one television network, we ought to be fair and balanced. And we can't be fair and balanced because Mr. Sell is attending a funeral. If you want to be unfair and unbalanced, go ahead. I think we ought to be fair and balanced, and when I held investigative hearings, I always had people on both sides testify, and if they couldn't come, we rescheduled the hearing so that everybody could see exactly what the issues were, starting with the Committee Members.

Chairman MILLER. Well, Mr. Sensenbrenner, you were not part of the telephone conversations that I was part of with the Department of Energy, and if you were under the impression that they were eager to have Mr. Sell come and appear before this committee, my experience is no, that that is not the case.

Mr. SENSENBRENNER. Well, reclaiming my time, of course, when we are investigating them they are not eager to have somebody appear before the Committee. My point is we ought to listen to both sides, and by going ahead with this hearing, you are not going to listen to both sides.

Chairman MILLER. My immediate concern is the convenience of several witnesses who have come to Washington today. Mr. Lampson, you wish to be recognized as well.

Chairman LAMPSON. Well, and that is the point.

Mr. SENSENBRENNER. Well, it is my time, and I yield to the gentleman from Texas.

Chairman LAMPSON. Thank you, Mr. Sensenbrenner. I, too, was concerned about the folks that had already been scheduled. I just wanted to ask of whom we had heard or to whom the statements from the Department of Energy were directed so that we could know about the request for postponement. And it is going to be only a postponement. We will have Mr. Sell here on August the 1st.

Mr. SENSENBRENNER. Reclaiming my time, this all goes to show that because the Majority wants to attack the Department of Energy, I guess we are going to have two hearings to attack the Department of Energy when we could very easily have done it with one and have both sides speak and have both sides on the witness stand at the same time and Members of the Committee can ask questions to actually get to the bottom of this. From everything I know the problem is DOE headquarters. It is not the DOE personnel that is down at SREL, and the only way we are able to get DOE headquarters to be able to testify knowledgeably is to have Mr. Sell here.

I have made my point. It is now up to the Majority to decide whether we are going to have a fair and balanced hearing or not, and I see my time is up.

Chairman MILLER. Thank you, Mr. Sensenbrenner. Mr. Inglis.

Mr. INGLIS. Mr. Chairman, I do recognize the significance of Mr. Sensenbrenner's questions. I think they are well placed before this committee, before the Chairs to—the hearing goes forward. It is, I think, important to get to the bottom of these things. I wish that we were having a balanced hearing here, and it is important to find out what is going on. For more than 50 years the Savannah River Ecology Lab at the University of Georgia has been a helpful resource as I understand it to the Savannah River Site. Savannah River Ecology Lab's research projects and educational outreach activities help Savannah River Site understand the ecological impacts of the site's operations.

Today we will hear from several witnesses, not as many as we would like to hear from, who will attest to the usefulness of the lab's projects, both to SRS and to the surrounding community. And they will assert the need to continue funding these programs.

I look forward to hearing their testimony. I also look forward to hearing what the Department of Energy has to say, and I yield back the balance of my time.

[The prepared statement of Mr. Inglis follows:]

PREPARED STATEMENT OF REPRESENTATIVE BOB INGLIS

Thank you, Mr. Chairman, for holding this joint hearing.

For more than 50 years, the Savannah River Ecology Lab (SREL) at the University of Georgia has been a helpful resource to the Savannah River Site (SRS). SREL's research projects and educational outreach activities help SRS understand the ecological impacts of the site's operations.

Today, we'll hear from several witnesses who will attest to the usefulness of SREL's research projects to both SRS and the surrounding community, and the need to continue funding these programs. I look forward to hearing their testimony.

Thank you again, Mr. Chairman, and I yield back the balance of my time.

Chairman MILLER. Well, again, Mr. Sensenbrenner said it is for the Majority to decide. I would like to take a quick recess for Mr. Sensenbrenner to discuss this matter on the Minority side and with the Minority staff, because, again, my understanding of what has happened is different from what Mr. Sensenbrenner just said. I am not accusing Mr. Sensenbrenner of misrepresenting the facts. I think perhaps our understanding is different.

And I would like to take a brief recess, and I also would like to inquire quickly, and we are looking at a really long hearing if we try to do everything in one day. The hearing in less than two weeks is three panels of the Department of Energy, and this is today three panels if we count Representative Barrow.

We, I have a long line of questioning prepared to go to Mr. Barrow's credibility as a witness, but my staff has advised me that is probably not appropriate. But for the other Members who are, the other witnesses who are here, I know it was not convenient to come to Washington. It would not be convenient to come back a second time, but what is your availability on August 1? Because I would rather have this hearing be about the decision and the conduct of the Department of Energy, not about procedural fairness.

What is your availability? How inconvenienced will you be? I know you are all sitting on the front row. Could you, those who are set to testify in later panels today.

Mr. Bertsch, what is your availability on August 1? I am sorry. What?

Okay. Dr. Whicker. Dr. Schnoor. I yield to Mr. Hall.

Mr. HALL. Chairman, I appreciate your efforts to approach fairness here, and there would be opening statements that I would ask permission to give in a little bit and name other people that probably ought to be here that were really a part of the line there——

Chairman MILLER. Again, Mr. Hall, there will be a hearing with three panels on August 1. Three panels all from the Department of Energy on August 1.

Mr. HALL. Well, I think there are at least maybe three other people from the Department of Energy that were either—or those that, under his direction that have some information that the Chair would value, and Members of this panel in arriving at your decision.

Chairman MILLER. The reason, again, Mr. Sell was scheduled to testify today. It is his schedule, and I am——

Mr. HALL. Yeah, and I recognize that.

Chairman MILLER.—sympathetic to his need to attend the funeral of someone close to him, but Mr. Sell was more than politely invited.

Mr. HALL. I don't question that, and these gentlemen have indicated that they could come back.

Chairman MILLER. Well, actually, the two witnesses who will testify to the value of the research at the lab, I mean, I assume the Department of Energy, if they wish to tell their side of the story, it has to, with the negotiations with the lab about funding. And for that Dr. Bertsch has said that he believed he could come back. But it would, but the two scientists who are familiar with the work of the lab have traveled some distance to be here, and we have heard one of them say that he would have to interrupt a family vacation to come back on August 1.

Mr. HALL. I don't like to do that.

Chairman MILLER. Well, I wouldn't like to do that either. Mr. Sensenbrenner, if Mr. Bertsch comes back and that the testimony be, and I am not terribly concerned about Mr. Barrow's schedule. I believe he is probably going to be in Washington regardless, but the two scientific witnesses could testify today, and we could hold Mr. Bertsch to testify on August 1. It would be a long day of hearings.

Mr. SENSENBRENNER. If the Chairman would yield——

Chairman MILLER. I do yield.

Mr. SENSENBRENNER.I don't think the issue is the scientific value of what has been done at SREL. I can stipulate to the fact that the scientific value is there. The issue is why the DOE headquarters had a different view of the DOE personnel that were on site, and that is what we ought to be investigating. Now, you know, I would ask unanimous consent that the witness's prepared statements at today's hearings be included in the record, and if, you know, we want to get to the bottom of this, I think we ought to be looking into what went on at DOE headquarters on this.

You know, I guess, you know, my point is, is that when Dr. Sell, you know, could not appear because of the necessity of him attending the funeral, there should have been sensitivity on the part of the Majority staff to reach a decision on whether to go ahead with this hearing before the witnesses ended up leaving wherever they were to come to Washington, D.C. You know, I certainly don't want to inconvenience them, but I do want to make sure, you know, that we have a fair and balanced hearing.

I thank the Chair for yielding.

Chairman MILLER. All right. If Dr. Bertsch can come back on August 1, I believe that the contested, the factual issues, contested, disputed factual issues all have to do with Dr. Bertsch's testimony.

Mr. SENSENBRENNER. That is true.

Chairman MILLER. Not with the testimony of Dr. Schnoor and Dr. Whicker, who will testify to the value of the scientific research done at this laboratory.

Chairman LAMPSON. Mr. Chairman, may I be recognized——

Chairman MILLER. Mr. Lampson.

Chairman LAMPSON.—for a request? Can we take a five-minute recess and discuss this?

Chairman MILLER. We can take a five-minute recess. The Subcommittees will be in recess for five minutes.

[Recess.]

Chairman MILLER. We are back in order. The first I had heard from anyone from the Minority, from the Minority Members, from Minority staff, from the Department of Energy, that there was any complaint at all about this hearing going forward was Mr. Sensenbrenner's opening statement. I am not hard to find. I have found Mr. Sensenbrenner on the Floor to discuss matters before this committee. I have tried to consult with him. I think that is the way to proceed in a collegial fashion, as cooperatively as we can. His locker is across from mine in the House gym. We see each other. We talk. The first I have heard of any objection at all to today's hearing was in the opening statement.

Now, Dr. Bertsch has said that he can come back. Dr. Bertsch, your testimony is very important. We need you back. I believe that the only factually-contested issues pertain to your testimony, Dr. Bertsch, and we will take that up on August 1.

The Department of Energy, it was my personal experience, not just what I heard through staff but my personal experience is the Department of Energy has been less than cheerful in dealing with this issue. We need your documents, we need all that we have requested. We don't need them in dribbles and drafts. We need the rest of what we have requested, and we need them well before August 1 so our staff has a chance to review them thoroughly so that everyone, the Minority, is prepared to ask questions of Dr. Bertsch, we are prepared to ask questions of the Department of Energy, everyone is prepared for the next hearing.

But Dr. Bertsch's panel today will be postponed until August 1, which will be a long day. I also encourage the Minority Members to talk to the Minority staff, because my understanding, again, of what has happened with respect to this hearing is very different from what has been represented here.

Mr. SENSENBRENNER. Will the gentleman yield?

Chairman MILLER. I will yield in a moment. And it is the first that I have heard the Department of Energy objected in any way with going forward with this hearing as scheduled today. We will go forward on August 1. There will be four panels, three that we have already scheduled, the representatives of the Department of Energy and Dr. Bertsch. And we will hear the factual discussion of what happened, how the decision was made.

Today we will hear from Representative Barrow, and we will hear from the two scientific witnesses who can testify to the value of this lab's work.

Now, I now yield to Mr. Sensenbrenner.

Mr. SENSENBRENNER. Well, let me say that it is not my intent to further inconvenience the two scientific witnesses, except to reiterate the point that the scientific value is not the issue that is in contention, that we are investigating.

What I will say is that I was not aware of Mr. Sell's personal problem where he had to leave town for a funeral until late last night or the first thing this morning. I was not in the gym this morning working out. I didn't see the Chairman there. But, you know, let me say in order to make sure that we do have a complete record, it is my hope that on the August 1 hearing that in addition to Mr. Sell that the Chair call Charlie Anderson, who is the principle Deputy Assistant Secretary for the Office of Environmental Management, and Jill Sigal, who is the former Assistant Secretary of Energy for Congressional and Intergovernmental Affairs. She has left the DOE in April of 2006, but she was around and dealing with this at the relevant time when the decision was made.

I would hope that if we are accommodating to the Majority and going ahead with the hearing today, that they would be accommodating to us in having all three of these individuals as Minority witnesses. Failing that, the Minority will have no opportunity except to invoke that part of the rule that allows for a Minority day of hearings. Then we end up having three hearings on this, whereas if the Majority were sensitive, we could have rolled this all into one.

And I yield back.

Chairman MILLER. And Mr. Sensenbrenner, all those witnesses are scheduled is my understanding, are scheduled on August 1. So we should hear from everyone. If the Minority has other witnesses to suggest, we certainly are willing or we certainly will try to accommodate the Minority and to have a procedurally fair hearing, that our inquiry into this will be procedurally fair. That does not mean the Department of Energy will like the outcome, but we will, it will be procedurally fair.

And, again, I am not that hard to find. My office has a telephone number, all the Members have a directory of all of our offices' telephone numbers. I have a Blackberry. I actually read my messages, somewhat compulsively like most people who have Blackberries. I am easy to find on the Floor. It is not hard to find me, and I believe that our staff talks constantly. The Minority and the Majority staffs talk constantly.

Mr. Lampson.

Chairman LAMPSON. Thank you, Mr. Chairman. I just want to express my chagrin at this. There hasn't been very much fairness up to this point on DOE, and there has been, there have been many things said and many actions made that many people are finding absolutely abhorrent. SREL has been treated unfairly. I think they should be able to tell their story to as best as possible get us prepared for those future hearings.

It disappoints me to hear the kind of things that we are hearing here this morning. To me there has not been balance in the way the budget or the people at SREL have been treated. The budget has been cut, people have been terminated, jobs have been lost as of June the 29th, I believe. There is the potential for significant amount of data that has been continuously gathered since 1951, to not be able to be gathered, and the longer that we wait before, as I said earlier, this mystery begins to unfold, the harder it is going to be for it to be put back together again, and the potential for valuing what is going to be potentially lost.

So if we postpone this based on a technicality, and I think that we were notified on Wednesday, the 12th of July, that Mr. Sell would have to be out of town for a funeral, today is the 17th, so that was five days ago. I am not going to say that there have been additional shenanigans being played, but I think the question of fairness on the part of that agency, to a lot of lives and to a lot of information that means a great deal to the lives of citizens across the United States of America, is at least questionable.

It disappoints me very significantly that an issue like this would be raised in the manner in which it has been raised. I for one am embarrassed with it, and I think that this committee should be.

I will yield back my time.

Chairman MILLER. I think we have had opening statements of a sort from the Chairs and the Ranking Members of both of the Subcommittees. If any other Member has an opening statement, we will welcome that in writing for the record.

[The prepared statement of Mr. Costello follows:]

PREPARED STATEMENT OF REPRESENTATIVE JERRY F. COSTELLO

Good morning. Mr. Chairman, thank you for calling this hearing to examine the past and current work of the Savannah River Ecology Laboratory (SREL) and the events leading up to the current funding crisis.

SREL was established to track the ecological changes and environmental consequences of establishing nuclear weapons production facilities on the Savannah River Site (SRS). SREL evaluates the effects of SRS operations through a program of ecological research, education, and outreach involving both basic and applied environmental processes and principles. SREL has a distinguished record of publications, with the research staff publishing more than 80 articles in peer-reviewed scientific publications annually, and an astounding amount of unbroken data sets on the ecology of the site.

I am concerned that in the past few years, the Bush Administration's budget requests have decreased funding and, at one point, called for an elimination of funding all together for this important laboratory.

Further, I am concerned the cooperative agreement reached on December 1, 2006 between the Department of Energy (DOE) and SREL did not fully disclose the terms and scope of the "technical peer review" system. It was not until months later that the term was properly defined by the DOE. As a result of the scope and standards of the new technical peer review system, the DOE was able to drastically cut projects and informed SREL that only $800,000 of its proposed $3 million in work would be funded. Due to the lack of DOE projects funded, the University of Georgia reduced the personnel at the lab and currently employs 30–40 individuals on site to carry out work funded through grants already in place from other agencies. I am interested in hearing from Dr. Bertsch why SREL signed the cooperative agreement; what SREL's understanding of "technical peer review" was; and how the DOE's implementation has affected their ability to complete projects.

Mr. Chairman, because of the significant impact of the DOE's decision to withdraw funding for the laboratory, I look forward to hearing from our witnesses their thoughts regarding the events leading up to the funding crisis, the decision to withdraw funding, and the future of SREL.

[The prepared statement of Mr. Barrett follows:]

PREPARED STATEMENT OF THE HONORABLE J. GRESHAM BARRETT
THIRD CONGRESSIONAL DISTRICT OF SOUTH CAROLINA
U.S. HOUSE OF REPRESENTATIVES

Chairman Miller and Ranking Member Sensenbrenner, thank you for allowing me the opportunity to share my thoughts regarding the Savannah River Ecology Lab with you. I also appreciate the work you are doing to find a practical solution which will allow the lab to continue to operate.

As you are probably aware, the Savannah River Ecology Lab (SREL) is located on the Department of Energy's Savannah River Site (SRS) in South Carolina. The only laboratory of its kind in the Department of Energy's (DOE) complex, the SREL has been operated by the University of Georgia since its 1951 founding by Dr. Eugene P. Odum. At that time, it was tasked and funded by the Atomic Energy Administration, DOE's predecessor, to perform the ecological baseline studies on the Savannah River Site. Over the past fifty-six years, the SREL's mission has evolved to include not only an independent evaluation of the ecological effects of nuclear activities at SRS, but also internationally recognized research, education, and public outreach programs.

I am proud to represent the Third District of South Carolina in which the lab is located, and I have been fortunate to see firsthand the valuable work that the SREL does. As an independent laboratory staffed with university scientists, the SREL provides a thoughtful and unbiased evaluation of the effects of SRS operations on the environment and helps to ensure the safety of the surrounding community. Today, as environmental cleanup becomes an important part of the overall SRS mission, we believe the operation of SREL remains critical and will continue to provide valuable information related to the long-term stewardship issues at the site.

Throughout the lab's existence, SREL has also been highly-touted for its insightful research and education on subjects such as remediation and the effects of environmental contamination, restoring degraded habitats, and environmental stewardship. It is home to award-winning scientists who have authored more than 3,050 scientific journal articles as well as approximately 50 books since its founding, and students from universities across the United States have studied, co-authored peer reviews, and developed their dissertations based on research at SREL. Without a doubt, as interest in nuclear energy continues to increase worldwide, the value of the scientific work being done at the SREL will only grow in importance.

In addition to the essential research being done at the lab, the SREL provides important Environmental Outreach programs to individuals and families of the Central Savannah River Area (CSRA). Each year, the lab creates greater awareness of the diverse ecosystems of the SRS among children and adults across the region by offering Ecotalks, live plant and animal exhibits, and tours open to the public. Additionally, the SREL outreach programs supply informative materials regarding basic ecology and biology to students and teachers throughout the CSRA and even nationally, greatly enriching students' understanding of the sciences.

As you can see, for over 56 years, the Savannah River Ecology lab has served the SRS, South Carolina, and the Nation through innovative research and outreach. Because of its strong track record, the lab has received strong bipartisan support from both the South Carolina and Georgia delegations in the House of Representatives and the Senate. I continue to be a proponent of the work the lab does and am saddened by the situation it finds itself in today. While there has been much argument as to who is at fault, it is my hope that the Department of Energy, the University of Georgia, SREL, and Congress can work side-by-side to find a solution that will allow the lab to continue to serve our country through its threefold mission of research, education, and outreach. I look forward to any insight this committee may be able to provide on the matter and again thank you for allowing me to submit my statement.

Chairman MILLER. And now the Chair will recognize Honorable John Barrow, who represents the district that includes the University of Georgia campus and the communities that border the Savannah River Site, who has devoted a great deal of his time and energy, effort to protect the lab's work and to insure its future.

And I want to thank him for bringing this, his role in bringing this to our, to the Subcommittees, the two Subcommittees' attention, and we look forward to his testimony today.

And, Mr. Barrow, I am somewhat disappointed. We usually place witnesses under oath and remind them of the penalties of perjury, but for whatever reason we are not doing that with respect to you.

Mr. Barrow.

Panel I:

STATEMENT OF HON. JOHN BARROW, A REPRESENTATIVE OF THE STATE OF GEORGIA, 12TH DISTRICT

Mr. BARROW. Thank you, Chairman Miller, thank you, Chairman Lampson. All right. Well, that is the one I started out with, but someone turned this one away and turned that, flipped that other one on.

Thank you all for calling this hearing. In the interest of full disclosure, I don't represent the University of Georgia campus any longer, but I do represent the part of this country that is probably most affected by the ongoing work, that is the entire watershed from the fall line at Augusta all the way down to the mouth of the Savannah River at the city of Savannah.

I share that interest with my colleagues in South Carolina, Gresham Barrett, Mr. Inglis to a certain extent, and Joe Wilson down at the other end.

I want to try and put in my words what it is I think we are dealing with here, what it is I think we have here, and what I hope we will take away from this.

First of all, what we are dealing with here. Over half a century ago our country embarked at the height of the Cold War on a technological building boom to build the weapons that we would use to win the Cold War. Now, we either use them by dropping them or use them by not dropping them. It was our fear that we might have to drop them, in which case we would all lose, but it was our hope and our expectation that if we had them, we wouldn't have to use them. And we embarked on a building plan that rivals nothing that we have seen in this country before or since, and it took place at places like the Savannah River Site, took place at Hanford, took place at Oak Ridge, Los Alamos, all over the country this was going on.

This was a building program that involved buying up a whole bunch of land so we could put buffers between the people and the work that was being done there. We are talking about dirty work that had never been done before, on a scale that had never been imagined before, with consequences we never faced before, and that is what we started to do about half a century ago.

It was all a non-peer-reviewed work done by Government contractors submitting the lowest bid. At the same time there was a fellow who had a vision about how to deal with, at least to monitor the situation by the name of Eugene Odum. He was literally the father of modern ecology, wrote the book, practically invented the word, certainly is the guy who was responsible for the words, currency and usage, in everyday English.

Dr. Odum had a vision. His vision was something along these lines. This is something that is worth watching, this is something that needs watching, and here is an opportunity to watch it that we have never had before. It is worth watching because we were involved in all kinds of dirty work on hundreds of square miles, ascribed a watershed, and what was going on there wasn't just going on. It was going on all over the country.

Now, Congress adopted this vision way back in 1972, when we first adopted the National Environmental Research Parks Program. The Savannah River Site was the first National Environmental Research Park, and this ain't a park like the kind of parks we are used to. This isn't a park where folks can go. It is a park where animals wander in and wander out. It is a park where water and the ceaseless cycle of waters comes and goes. It is a park that was supposed to be open to scientists in the words of the DOE as a protected outdoor laboratory where long-term projects can be set up to answer questions about what we are doing on this scale and in places like this.

These are parks that are unique in the words of the DOE because they provide opportunities for research to study the compatibility of the environment with energy technology options. That is fancy words to say can we survive doing what we are doing here? Or are we going to kill ourselves in the process? Are we going to poison ourselves in order to keep ourselves from being blown up?

Again, these are parks, but they are not real parks. These are parks that are closed to people but supposed to be open to scientists.

Now, the thing I want to emphasize is when the DOE talks in sort of fancy language about how these are places where you can, a protected outdoor laboratory. This is a normative statement. This is something we ought to have. We are actually conducting great big old laboratories. These are laboratories, in fact, whether we like it or not. We are conducting experiments on a scale that has never been done before. The industrial generation of nuclear waste and its ponding and pooling and amassing in these places is something that has never been done before. We are experimenting like crazy in these seven places around the country, and whether or not we recognize it and treat it as a laboratory is up to us. But whether or not it really is a laboratory, where we are doing things that have never been done before, playing God in ways that have never been done before, that is a fact. And Congress recognized that back in 1972.

The only issue here as I see it is not whether or not scientists are going to be allowed to run the lab. It is still going to be run by bean counters accountable to politicians. The question is not whether scientists are going to be allowed to run the lab. The question is whether or not there are going to be scientists actually in the lab watching what is going on on a continuous basis.

Now, these parks are, in the words of the DOE, a unique asset to the country. SREL is unique because it is the only institution in the entire country where we have actually been monitoring and treating it like a laboratory from the very get go. It is the only place in the country where we have set data to, data sets to use the term, where we know what has been going and watching what has been going continuously from the beginning.

And so it is unique. It has a unique role to play for all the others.

It is also unique because it sets astride an ecosystem that has more complexity and more diversity than any of the others. If we can get it right, if we can understand what is going on in the euphemistically referred to Southeastern Mixed Forest, swamp, pine, slash, you name it. If we can figure out what is going on there, we can figure out what is going on in shrub step, we can figure out what is going on in Juniper, Penyan, and Grassland, we can figure what is going on in all the other places where environmentally speaking it is a cakewalk compared to the complexity and the diversity of what is going on in Savannah River.

So what I am trying to do is set the stage and point out that this has enormous implications beyond just the local. This isn't just a question, although it is a question, of the way we treat the employees and the loyalty and the support we given the folks that are doing this work. It is not just that. That is important to me, it is important to Gresham Barrett. It is not just important to the immediate environmental watershed of the Savannah River. That is important to me, it is important to Barrett, it is important to Inglis, and it is important to Wilson and the Senators on both sides. It is about trying to maintain and monitor the lab, and the one place where we have been doing this from the very get go so that we don't lose sight of that vision.

We have got to watch what is going on so we don't poison ourselves in the process of not blowing ourselves up.

Now, what do we have here? What I think we have here is a five-year plan to defund the SREL by folks who basically think it ought to be converted into any other kind of commercial contractor, sort of a gigantic Serve Pro, bidding for some of the cleanup work at the Savannah River Site.

Now, with all due respect to the Serve Pro folks, I acknowledge what they do, but this is not that kind of mission. This is not that kind of asset. It is not that kind of legacy.

What we also have here is a failure to communicate, and you are all going to get to that, and I encourage you all to get to the bottom of it. What I hope we will take away from this, let us talk about what I want to take away from this series of hearings. This is not about the jobs in the area, although that is important. It is not about the immediate environmental impact, although that is important. And it is certainly not about Dr. Odum's legacy. That gentleman's—I knew the man. He was the greatest man I have ever met, the most brilliant and unassuming person you will ever know. He is an amazing fellow, but his legacy is established far beyond our poor power to add or detract.

It is about, though, the work of his hands, which is still running there and which serves as the only institution that has been doing this work from the very beginning and do it in the one place where if you can do it no place else, it has got to be done there for the benefit of all these National Environmental Research Parks around the country.

It is about, try to take our cue from Dr. Odum. Dr. Odum did anything in his life. He helped us understand the connections between things and the importance of things that we took for granted and the importance of the little things, the little things that we didn't really think much about until they were gone. If we can take anything away from this, if we would apply Dr. Odum's vision toward this problem, then the temporary elected officials who occupy this political nitch for the time being can preserve and protect something that we badly need everywhere. We ought to expand and have SREL in all of the National Environmental Research Parks. That ought to be what we take from this is a commitment to expand this elsewhere.

But if we can take his vision, the appointed officials and the elected officials who are occupying this little nitch for just the time being won't destroy something that needs to be protected. We can actually preserve it, enhance it, and that I think is what we really need to do.

I thank the Chairman for the courtesy of allowing me to speak here. I thank you all for your stick-to-it-iveness, and I know I have talked too much. I will yield back whatever time I may have left.

[The prepared statement of Mr. Barrow follows:]

PREPARED STATEMENT OF REPRESENTATIVE JOHN BARROW

Chairman Miller, Ranking Member Sensenbrenner; Chairman Lampson, Ranking Member Inglis, and Members of the Committee:

Thank for holding this hearing and thank you for inviting me to appear before you today.

I am extraordinarily concerned with recent actions by the Department of Energy that I understand have drastically reduced the adequate, stable, and mission-based funding for the Savannah River Ecology Laboratory and have caused the Laboratory, for all practical purposes, to close.

Over the past five years, the Department's support for the Lab has been drastically reduced and manipulated, while the University of Georgia, which manages the Laboratory, has continued to uphold its end of the financial bargain that has kept the SREL going over the years.

It seems evident to me that the Department of Energy's policy of reducing funding for the Savannah River Ecology Laboratory (SREL) is about to take from all of us a valuable research tool to protect our citizens and our environment. I am convinced that the need for sufficient and sustained Laboratory funding from the Department is crucial. The Department's drastic reduction in funding, and the processes they employed in reducing funding, have come under increased scrutiny recently, we must learn the truth.

I thank you and your staff for the timely and energetic investigation of the Department of Energy's current and past plans to reduce and eliminate funding for this laboratory. The more I learn about the situation involving the Department's SREL funding, the more I'm puzzled.

After first becoming aware of the dire funding situation at SREL, and in my initial contacts with Secretary Bodman and his staff, I suggested to the Secretary that we work together to develop and plan an expanded, ample, and stable DOE budget that would support the laboratory's vital mission. The Department's response to me was vexing. I was told a story that didn't quite jive with the communications that I had received from the scientific community, local leaders, and others who were familiar with the situation.

Specifically, I was told by the Department in a letter from Secretary Bodman's staff, that the research being conducted at the facility was not 'peer reviewable.' When I checked on this I was assured by some of the top scientists in the country that the research at SREL was fully peer reviewable and that the quality of the research was top-rank. This is only one of the inconsistencies that been unearthed in the early stages of discovery.

The Savannah River Ecology Laboratory, founded by Dr. Eugene Odum, one of the most influential figures in the history of ecology in the 20th century, has been studying the effects of the Department's nuclear production and processing activities on the environment, wildlife creatures, and habitat at Savannah River Site (SRS) for over fifty-five years. Currently, the Laboratory supports cleanup missions as well as providing critical information related to long-term stewardship issues at the Department of Energy's Savannah River Site. This kind of research has enormous implications for the surrounding watershed, which includes a large part of the 12th District of Georgia, and quite frankly for nuclear production sites around the world.

SREL is an independent academic laboratory that provides significant credibility among the general public and regulators on issues related to environmental impacts of nuclear facility operations, as well as the overall health of Savannah River Site ecosystems. Through its partnership with the DOE, the Savannah River Ecology Laboratory has established a strong international reputation for conducting high quality ecological research. In fact, SREL is often cited as an institution whose expertise and research forms the basis of stakeholder support critical to the Department for conducting existing and future missions at the Savannah River Site.

The Laboratory is unique in its focus and mission, and the body of research that it has produced in over a half century of scientific exploration, is important not only for our country, but this body of work is recognized and utilized throughout the scientific world.

To this end I believe it is critical to have an independent and credible source of information on how activities at our nuclear productions sites affect wildlife, habitats, and our ecosystems. In addition to its ongoing research activities at the Savannah River Site, SREL is the organization that has the expertise, institutional memory, and academic credibility to develop and implement long-term monitoring plans at SRS and potentially at other DOE production sites that will be accepted and trusted by the general public, regulators, and other stakeholders.

After this investigation is concluded, and the findings published I would like to offer a view for the future. I would like to draw the Committee's attention to the issue of the best utilization of the National Environmental Research Parks. There are seven of these parks located on DOE sites throughout the country. The first one was established in 1972 on the Savannah River Site itself. Called the Savannah River Park, the site contains the greatest diversity of plants and animals in the entire southeastern region and has every major ecosystem found within the southeastern U.S. within its borders.

DOE originally acquired large tracts of land around its national nuclear production sites for security. These sites have been protected from commercial development and public access has been controlled and limited to the purposes of public education and research. In 1997, there was a suggestion that DOE divest these properties and the scientific community argued passionately for their preservation because of their great value for research and education.

Over the past, almost forty years, these sites have become ecological sanctuaries and natural laboratories unmatched in their size and diversity. Whether we talk about sound management of land and water resources, important species of animals, or better understanding and mitigation of the impacts of human activities on the environment, we must have information that has been systematically collected over many decades. That is exactly the type of information we have at SREL, and potentially this kind of research could be duplicated at these other National Environmental Research Parks.

This unfortunate crisis at SREL has brought an opportunity for Congress to use these parks more effectively. Once we get to the bottom of this investigation, and we restore Savannah River Ecology Lab functioning, I would propose that we should have SREL-like labs throughout the country at these parks, and then offer this model for interested allies, for most nuclear production sites around the world. This would be a great tribute to Dr. Odum, and a fitting recognition of the work that has been carried out by the dedicated scientists and staff at SREL for the past 55 years. I wouldn't even know how to place a value on the body of research that has been produced at SREL, it certainly cannot be duplicated or replaced if this laboratory is shuttered.

Instead of jeopardizing the future of valuable scientific assets with arbitrary and malicious budget cutting, the Department should be working to secure the future of these unique and valuable national assets that Dr. Odum foresaw these many years ago.

Thanks again for letting me come before you today, and I'd be glad to answer any questions.

Chairman MILLER. And that time is a negative five minutes.

It is not typically that Members ask questions of other Members, but actually I did ask questions of Mr. Hunter when he was here a couple weeks ago. Does any Member of the Committee have a question of Mr. Barrow?

If not, Mr. Barrow, thank you very much, and I will not use the questions that I had going to the credibility of the witness.

Our next panel we will receive the testimony of Dr. Ward Whicker, Professor of Radiological Health Science at Colorado State University. Professor Whicker, you can come forward now. Professor Whicker is regarded as one of the founders of the field of radioecology. He has had more than 98 articles published in peer-review journals. He is an honorary council member of the National Council of Radiation Protection and Measurements. He has also received the prestigious E.O. Lawrence Award in 1990, from the Department of Energy.

And then the final witness, Professor Jerald Schnoor. If you could take your seat here. Dr. Schnoor is the Alan S. Henry Chair in Engineering at the University of Iowa. Dr. Schnoor is a member of the National Academy of Engineering, a member of the EPA Science Advisory Board. He is the editor in chief for the journal, Environmental Science and Technology.

As our witnesses should know, your oral testimony, your spoken testimony is limited to five minutes, and the Chair may be a little more likely to enforce that than I was with respect to Mr. Barrow. And after that there will be questions from any Member of the Committee. It is our practice typically, except when we are dealing with one of our colleagues perhaps, to take testimony under oath. Do either of you have any objection to being sworn in, to swearing an oath?

All right. You also have a right to be represented by Counsel. Are either of you represented by Counsel today?

All right. And if you would please stand and raise your right hand.

[Witnesses sworn]

Chairman MILLER. Dr. Schnoor, you may begin.

Panel III:

STATEMENT OF DR. JERALD L. SCHNOOR, PROFESSOR, CIVIL AND ENVIRONMENTAL ENGINEERING; CO-DIRECTOR, CENTER FOR GLOBAL AND REGIONAL ENVIRONMENTAL RESEARCH, UNIVERSITY OF IOWA

Dr. SCHNOOR. Chairman Miller and Chairman Lampson, Ranking Member Sensenbrenner, Ranking Member Inglis, and Subcommittee Members, I thank you for the opportunity to testify regarding the funding crisis facing the University of Georgia's Savannah River Ecology Laboratory located on the Department of Energy's Savannah River Site near Aiken, South Carolina.

As the Chairman said, my name is Jerry Schnoor. I am a professor at the University of Iowa and member of the National Academy of Engineering, and I serve on the U.S. EPA's Science Advisory Board.

As Editor-in-Chief of the leading journal in the field, *Environmental Science and Technology,* I manage the peer review process for thousands of scientific papers which are submitted each year, including several from Savannah River Lab. One of my personal areas of research is groundwater and hazardous wastes remediation, especially phytoremediation. That is the use of plants to try to help clean the environment. It is a promising, long-term technology for some contamination problems at the Savannah River Site as well.

I do not have any public or private research grants related to SREL stock or stock options held in publicly-traded or privately-owned companies, nor have I received any form of payment or compensation from any relevant entity connected with this testimony.

Therefore, I hope and believe that I am qualified to testify about the quality and importance of the scientific research being performed at the Savannah River Lab and its relevance to DOE's strategic initiatives.

The information I am providing is based largely on my professional interaction with SREL faculty and a visit to the laboratory, a review of the institution's publication and history, and other DOE documents that are readily available in the public record.

Due to time constraints, greater detail and additional supporting information and documentation has been provided in my written testimony, and I ask that it be read into the record.

Since its founding in 1951, SREL's research emphasis has constantly evolved to meet the changing needs of DOE and SRS in particular in my opinion, which is reflected in even a cursory review of SREL's scientific publications and their site reports.

In response to a growing cost associated with environmental cleanups at DOD and DOE sites, the National Academy of Science has issued a report entitled, *Groundwater and Soil Cleanup: Improving Management of Persistent Contaminants,* by the National Research Council in 1999. In the report the committee clearly recognized the value of the Savannah River Ecology Lab, noting, "Ecological risks are better characterized at the Savannah River Site than at other DOE installations, due in part to the designation of the site as a National Environmental Research Park and the presence of the Savannah River Ecology Laboratory."

Despite such praise, the discussion concerning the current funding crisis has directly called into question the technical expertise of the SREL faculty and indirectly the overall quality and relevance of its research.

First, I want to address some misconceptions concerning the type of research conducted at SREL. Over the last decade or so there has been a clear shift in research emphasis at the lab with an increasing focus on contaminant fate and transport, largely in response to a more focused DOE cleanup mission. SREL faculty have demonstrated expertise in several active fields of research that are directly relevant to the Savannah River Site remediation efforts.

In addition to the clear practical benefit, SREL's support for the SRS pump-and-treat system resulted in four refereed articles in ES&T, my journal, two in Vadose Zone Journal, one in Groundwater, and one in the Journal of Contaminant Hydrology. In addition, SREL researchers have developed three other patented technologies, including a system that combines both contaminant immobilization with phytoextraction, the use of plants. And they have submitted initial paperwork for an automated environmental monitoring system.

The Savannah River Lab also plays an important role in the regulatory process by providing independent scientific credibility necessary for site management to propose and receive approval for alternative, cost-effective remediation strategies. In some instances SREL faculty have been asked to accompany site contractors to regulatory negotiations in case certain questions arise for which their technical expertise is required.

Mr. Chairman, my candid overall opinion is that the Savannah River Ecology Laboratory is providing the DOE and the Nation with high quality research in a very cost effective manner. It has long been recognized as perhaps the foremost land in terrestrial ecology in the country, and in recent years it is performing extremely useful research related to the date, transport, effects, and remediation of chemical contaminants relevant to SRS.

During the past 30 months alone, Savannah River Lab researchers have published eight rigorously peer-reviewed journals in ES&T, my journal, on nickel, uranium, mercury, radio-cesium, and lead, all important contaminants at the site. In light of these accomplishments, I strongly believe that SREL's funding should be continued. The survival of the Savannah River Ecology Lab as an independent academic institution on the Savannah River Site ensures that long-term management and remediation strategies and scenarios will be developed and implemented based on independent, verifiable science.

Thank you very much.

[The prepared statement of Dr. Schnoor follows:]

PREPARED STATEMENT OF JERALD L. SCHNOOR

Chairman Miller and Chairman Lampson, Ranking Member Sensenbrenner, Ranking Member Inglis, and Subcommittee Members: I thank you for the opportunity to testify regarding the recent funding crisis facing the University of Georgia's Savannah River Ecology Laboratory (SREL), located on the Department of Energy's Savannah River Site (SRS), near Aiken, SC.

My name is Jerry Schnoor. I am Professor of Civil and Environmental Engineering and Occupational and Environmental Health, and Co-Director of the Center for Global and Regional Environmental Research at the University of Iowa. I am also a member of the National Academy of Engineering, inaugurated in 1964 to provide technical advice to the Nation, and I serve on the U.S. Environmental Protection Agency's Science Advisory Board (SAB). As Editor-in-Chief of the leading journal in the field, *Environmental Science and Technology,* I manage the peer-review process for thousands of scientific papers which are submitted each year, including several from SREL. One of my personal areas of research expertise is groundwater and hazardous wastes remediation, especially phytoremediation, the use of plants to help clean the environment, which remains a promising long-term technology for some contamination problems at the Savannah River Site. I do not have any public or private research grants related to SREL, stock or stock options held in publicly traded and privately owned companies, nor have I received any form of payment or compensation from any relevant entity connected with this testimony. Therefore, I believe I am qualified to testify about the quality and importance of the scientific research being performed at the Savannah River Ecology Laboratory and its relevance to DOE's Strategic Initiatives.

The information I am providing is based largely on my professional interaction with SREL faculty and a visit to the laboratory, a review of the institution's publication history and the faculty's research accomplishments (available on UGA website), and other DOE documents that are readily available in the public record. Due to time constraints, greater detail and additional supporting documentation has been provided in my written testimony.

Since it's founding in 1951, SREL's research emphasis has constantly evolved to meet the changing needs of DOE and the SRS in particular, which is reflected in even a cursory review of SREL's scientific publications and site reports. In response to the growing cost associated with environmental cleanup at DOE and DOD facilities, the National Academy of Sciences issued a report entitled *"Groundwater & Soil Cleanup: Improving Management of Persistent Contaminants"* (NRC, 1999). In the report, the committee clearly recognized the value of SREL, noting:

> "Ecological risks are better characterized at the Savannah River Site than any other DOE installation, due in part to the designation of the site as a national environmental research park and the presence of the *Savannah River Ecology Laboratory*."

Despite such praise, the discussion concerning the current funding crisis has directly called into question the technical expertise of the SREL faculty, and indirectly the overall quality and relevance of their research. First, I want to address some misconceptions concerning the type of research conducted by SREL. Over the last decade or so, there has been a clear shift in research emphasis at the lab with an increasing focus on contaminant fate and transport, largely in response to a more-focused DOE cleanup mission. SREL faculty have demonstrated expertise in several active fields of research that are directly relevant to SRS remediation efforts.

In addition to the clear practical benefit, SREL's support for the SRS pump-and-treat system resulted in four refereed articles in ES&T, two in the *Vadose Zone Journal,* one in *Groundwater,* and one in the *Journal of Contaminant Hydrology.* In addition, SREL researchers have developed three other patented technologies, including a system that combines both contaminant immobilization with phytoextraction (U.S. No. 6719822), and they have submitted initial paperwork for an automated environmental monitoring system. SREL also plays an important role in the regulatory process by providing the independent scientific credibility necessary for site management to propose and receive approval for alternate, cost-effective remediation strategies. In some instances SREL faculty have been asked to accompany site contractors to regulatory negotiations in case certain questions arise for which their technical expertise is required.

My candid overall opinion is that the Savannah River Ecology Laboratory is providing the DOE and the Nation with high quality research in a very cost effective manner. It has long been recognized as perhaps the foremost laboratory in terrestrial ecology in the country, and in recent years it is performing extremely useful research related to the fate, transport, effects, and remediation of chemical contaminants relevant to SRS. During the past 30 months alone, SREL researchers have published eight rigorously peer-reviewed articles in ES&T on nickel, uranium, mercury, radio-cesium, and lead, all important contaminants at the site. (The references are listed at the end of this written testimony.) In light of these accomplishments, I strongly believe that SREL's funding should be continued. The survival of SREL as an independent academic institution on the SRS ensures that long-term management and remediation scenarios will be developed and implemented based on independent, verifiable science.

DOE management in Washington may not be aware that SREL researchers have assisted in the choice, refinement, and even the implementation of several high-profile SRS remediation efforts. For example, SREL researchers actively supported the F– & H–Area pump-and-treat groundwater remediation system, the Mixed Waste Management Facility's (MWMF) tritium remediation system, the 488D Ash Basin reclamation, and reclamation and closure of the SRL basins to name a few. SREL research was used in designing the water treatment facility for the $120 million dollar F– and H–Area pump-and-treat operation. These efforts further led to the development of a patented pump-and-treat technology for enhancing the extraction of contaminants from aquifers (U.S. No. 5,846,434).

As documented in the latest renewal of the Cooperative Agreement, SREL research "provides a further understanding of the environmental effects of SRS operations." More specifically, however, the Cooperative Agreement lists nine responsibilities in Appendix A, including the following (see the attached Appendix A from the Coop Agreement):

> SREL will assess the impact of site operations on the environment, and will continue to provide the public and DOE with an *independent* view of the environmental management of the SRS.
>
> SREL will continue *basic and applied environmental research* with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of site activities, new missions, and land use practices on the environment.
>
> SREL will use the information collected in the environmental research to develop and test hypotheses that will contribute to the *scientific foundation* necessary to conduct meaningful ecological risk assessments and to understand the environmental consequences of energy technologies, remediation efforts and other SRS activities.
>
> SREL scientists will work closely with SRS personnel to assist DOE and other SRS contractors in making *wise and informed decisions* concerning land and facilities management. SREL will continue to publish its scientific findings in peer-reviewed scientific journals to aid the public and to assist DOE in making policy decisions by providing a basis of *independent, verifiable science.*

Although SREL is well positioned to fulfill these responsibilities and more, one must note the inconsistency between the language of Appendix A and the assertion that all DOE funding will be provided only on a task-by-task basis based on "mission critical" needs in the current year. Two obvious questions quickly come to mind.

> How does DOE define mission critical needs?
>
> Through what process does DOE review SREL's research activities to determine if they are consistent with such needs?

In preparing for today's testimony, I studied the research task matrix that DOE instructed SREL to provide for the FY07 "funding review" (see attachment), and compared it with the April 2007 Draft version of the DOE-Office of Environmental Management's Engineering & Technology Roadmap: Reducing Technical Risk and Uncertainty in the EM Program, which is available on the DOE–EM website (*http://www.em.doe.gov/pages/emhome.aspx*). As noted in the document's introduction (see attachment), the Technology Roadmap was developed by DOE–EM, Deputy Secretary for Engineering and Technology, Mark Gilbertson, under Congressional direction within the FY 2007 House Energy and Water Development Appropriations Report to identify technology gaps and develop a strategy for funding proposals that address such needs.

It is clear that several ongoing SREL research programs (e.g., support for the tritium phytoremediation facility and characterization of grouts and other engineered waste isolation materials) and the proposed research tasks included in the task matrix, indeed, directly address many of the strategic initiatives identified in the DOE–EM Technology Roadmap.

The local public's response to the SREL funding crisis is indicative of the areas general support for DOE activities, a support that I contend has been fostered by SREL's presence on the site since it was established in the 1950s. Given this support, I want to draw attention to the general consistency between the DOE–EM Technology Roadmap and the NRC report drafted almost ten years earlier. Both documents clearly indicate that we lack the technical expertise required for the safe and cost-effective cleanup of the legacy wastes and facilities in the DOE complex. As the Roadmap notes:

> ". . . the remaining [cleanup] challenges will require a strong and responsive applied research and engineering program."

Although considerable progress has been made in the last decade, the DOE–EM Roadmap acknowledges that numerous challenges remain. However, environmental research over the last two decades indicates that following some initial intervention, like removing the pollutant source, many environmentally degraded systems will recover through natural biogeochemical processes, an observation that forms the basis for the widely adopted concept of Monitored Natural Attenuation (MNA). Furthermore, adopting a costly, highly invasive remediation strategy can result in ecosystem disruption that is far worse than the original contamination. It is my opinion that SREL's presence on the SRS has easily resulted in continued DOE cost savings that far outweigh the institutions annual operating budget.

Despite the apparent disconnect with respect to DOE–HQ's perception of SREL expertise, there are additional reasons for DOE to reinstate SREL's long-term funding. In contrast to the primary site contractors that must focus on more immediate management and remediation deadlines, often dictated by regulatory agreements, SREL's academic independence allows scientists to focus on more long-term remediation and stewardship concerns so that the required background information is available to support responsible decision-making now and in the future.

Research institutions like SREL are largely evaluated based on publication record and external grants. Despite the recent loss of several faculty positions due to budget cuts, SREL has averaged ≈85 refereed publications a year for the last six years, which is a very good rate of scientific productivity considering SREL's number of full-time faculty and the declining budget situation. Earlier this year SREL reached a significant milestone with the publication of the 3,000th peer reviewed article. Since 1991 alone, SREL researchers have published 44 articles in ES&T, a journal ranked #1 in total citations and articles published out of 140 journals in the field of environmental sciences, and #4 in Impact Factor, a measure of the relative number of times a specific manuscript within a journal is cited. Even a cursory review of the article titles verifies that they are directly relevant to our understanding of the fate, transport, ecological impact, and remediation of contaminants on the SRS, including major contaminants of concern (COC) such as chromium, uranium, plutonium, cesium, tritium, and chlorinated solvents, such as TCE and PCE, to name a few. The same is true of the work published in other journals as well.

Any summary of faculty accomplishments is sure to overlook numerous outstanding contributions, and so I encourage the committee to review the concise two-page CV's, typical of the format that is submitted with funding proposal, that have been attached to my written testimony. However, a few specific examples are worth noting that are relevant to the current discussion. SREL researchers have served as Associate Editors for the *Journal of Environmental Quality,* the *Soil Science Society of America Journal,* and *Water Air and Soil Pollution.* Members of the SREL faculty regularly provide scientific reviews of manuscripts submitted to ES&T and other scientific journals. Dr. Lee Newman is the Editor of the *International Journal of Phytoremediation.* A recent publication in *Geochemical Transactions* by Dr. A. Neal et al., (2007) was recognized as the most accessed paper for June 2007 and is the eighth most accessed for all time in the journal. Another publication by Neal, Rosso, Geesey, et al. (2003) was listed in top 25 most downloaded papers for 2003–2004 in *Geochimica Cosmochimica Acta.* These accomplishments are evidence of a vibrant and productive faculty who are publishing articles of high impact in the best journals in the world.

Recently, Dr. John Seaman served as the guest editor for a special edition of the *Vadose Zone Journal* showcasing remediation activities at the SRS, and he co-authored with Drs. Mary Harris and Brian Looney of SRNL the introductory article entitled "Research in support of remediation activities at the Savannah River Site," which highlighted collaborative research activities of SREL, SRNL, the U.S.-Forest Service, and other universities in addressing DOE needs. Furthermore, SREL research activities in support of SRS cleanup were also recently highlighted in several submissions to a special SRS edition of Environmental Geosciences. Representative from SREL have served as technical advisors to the Citizen's Advisory Board (CAB), a local independent organization established by DOE to provide local stakeholder input regarding operations and environmental issues associated with the SRS.

In summary, SREL research activities clearly support DOE's ongoing site remediation and long-term stewardship goals. The lab's presence fosters a more open dialogue that promotes stakeholder consensus when choosing an eventual course of action with respect to federal lands and resources. As demonstrated in the past, SREL's research efforts can reduce the long-term cost associated with site management and cleanup, lessen the public's anxiety concerning possible health risks associated with continued site operation, improve our fundamental understanding of subsurface processes that can be applied to other impacted sites, both government and commercial facilities, and prevent or greatly lessen the possible impact of future site activities on the environment and the surrounding public. The quality of SREL's science, the faculty's research productivity, and the relevance of the science to the DOE and SRS argues strongly for continued funding of the laboratory.

Appendices:

DOE–EM Technology Roadmap (April 2007 Draft)

SREL FY07 Funding Matrix

UGA Cooperative Agreement Appendix A

Two Page Summary CVs for each SREL Faculty member

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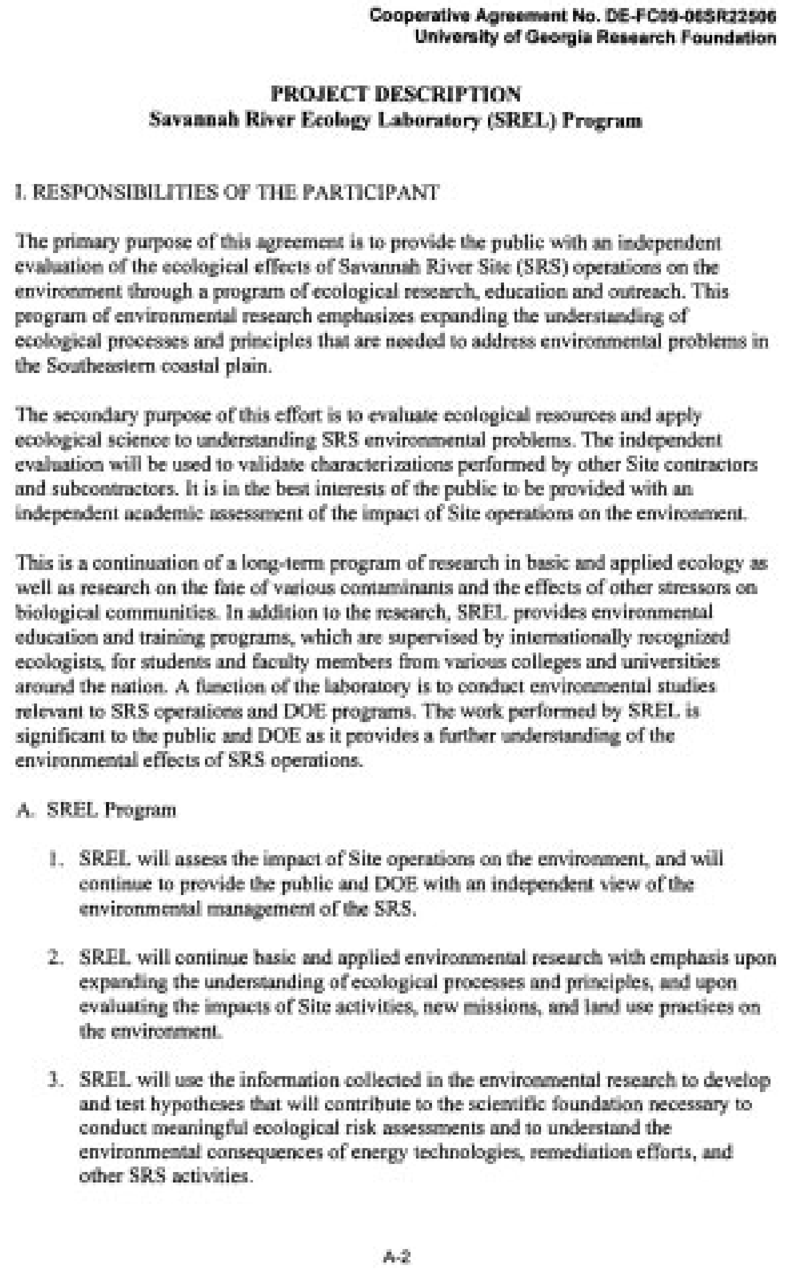
Cooperative Agreement for the Savannah River Ecology Laboratory

Appendix A

APPENDIX A



PROJECT DESCRIPTION
Savannah River Ecology Laboratory (SREL) Program

I. RESPONSIBILITIES OF THE PARTICIPANT

The primary purpose of this agreement is to provide the public with an independent evaluation of the ecological effects of Savannah River Site (SRS) operations on the environment through a program of ecological research, education and outreach. This program of environmental research emphasizes expanding the understanding of ecological processes and principles that are needed to address environmental problems in the Southeastern coastal plain.

The secondary purpose of this effort is to evaluate ecological resources and apply ecological science to understanding SRS environmental problems. The independent evaluation will be used to validate characterizations performed by other Site contractors and subcontractors. It is in the best interests of the public to be provided with an independent academic assessment of the impact of Site operations on the environment.

This is a continuation of a long-term program of research in basic and applied ecology as well as research on the fate of various contaminants and the effects of other stressors on biological communities. In addition to the research, SREL provides environmental education and training programs, which are supervised by internationally recognized ecologists, for students and faculty members from various colleges and universities around the nation. A function of the laboratory is to conduct environmental studies relevant to SRS operations and DOE programs. The work performed by SREL is significant to the public and DOE as it provides a further understanding of the environmental effects of SRS operations.

A. SREL Program

1. SREL will assess the impact of Site operations on the environment, and will continue to provide the public and DOE with an independent view of the environmental management of the SRS.

2. SREL will continue basic and applied environmental research with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of Site activities, new missions, and land use practices on the environment.

3. SREL will use the information collected in the environmental research to develop and test hypotheses that will contribute to the scientific foundation necessary to conduct meaningful ecological risk assessments and to understand the environmental consequences of energy technologies, remediation efforts, and other SRS activities.

4. SREL public outreach and communication programs will focus on the SRS environment and SREL ecological research to increase the public's understanding of scientific issues affecting the Site and to increase general ecological awareness.

5. SREL will maintain ecological data bases for use by the public, SRS, governmental, academic, and private organizations. These databases incorporate more than 50 years of data collection on the SRS and provide a resource for understanding changes impacting ecosystems on the SRS and elsewhere in the southeastern United States.

6. SREL will serve as the point-of-contact for the "DOE Research Set-Aside" areas that are protected from Site impacts so that they are available for environmental research and can serve to establish representative standards for comparison to impacted areas on the SRS. Currently SRS has 30 "set-aside" areas. SREL will also continue to promote the role of the SRS as a National Environmental Research Park.

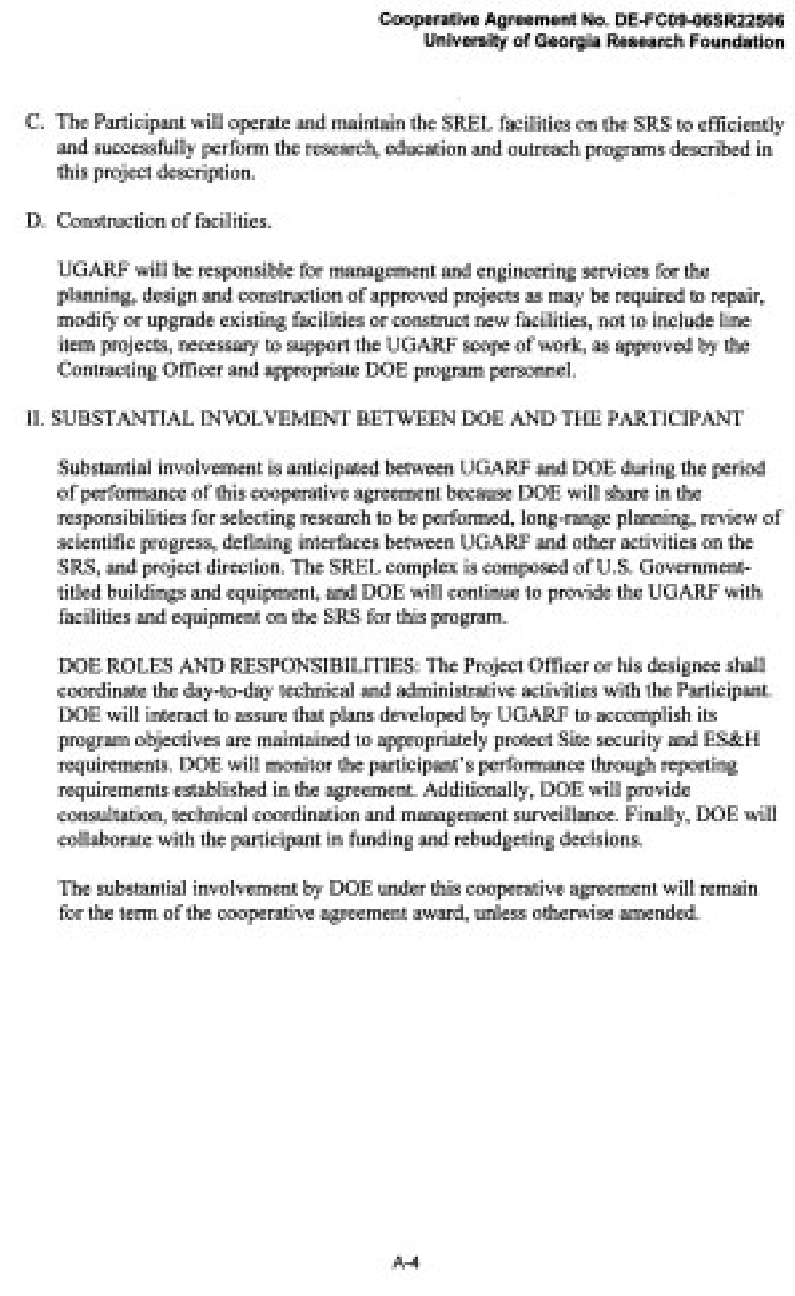
7. Through its research and public outreach programs, SREL will increase scientific understanding in the general areas of environmental characterization, ecological risk assessment, and environmental remediation and restoration. This will require research on topics such as terrestrial and aquatic ecology, environmental chemistry, molecular ecology and genetics, microbial ecology, radiation ecology, and ecotoxicology. SREL will also continue to communicate and coordinate with SRS contractors and the public on these issues.

8. SREL will continue to serve as a regional resource for scientific expertise and environmental research. SREL staff scientists will continue to provide special technical expertise to other Site contractors, area stakeholders, other researchers, and the public. SREL will also continue to collaborate with scientists from other institutions.

9. SREL scientists will work closely with SRS personnel to assist DOE and other SRS contractors in making wise and informed decisions concerning land and facilities management. SREL will continue to publish its scientific findings in peer-reviewed scientific journals to aid the public and to assist DOE in making policy decisions by providing a basis of independent, verifiable science.

B. University/Laboratory Cooperative Programs

SREL will provide stipend support to college undergraduates, graduate students, and visiting faculty investigators to conduct research on the Savannah River Site in association with ongoing environmental research studies. The objective of the program will be to provide participants, including minority students and Historically Black Colleges and Universities, with an opportunity to pursue ecological research and training under the direction and supervision of SREL scientific staff members.



C. The Participant will operate and maintain the SREL facilities on the SRS to efficiently and successfully perform the research, education and outreach programs described in this project description.

D. Construction of facilities.

UGARF will be responsible for management and engineering services for the planning, design and construction of approved projects as may be required to repair, modify or upgrade existing facilities or construct new facilities, not to include line item projects, necessary to support the UGARF scope of work, as approved by the Contracting Officer and appropriate DOE program personnel.

II. SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE PARTICIPANT

Substantial involvement is anticipated between UGARF and DOE during the period of performance of this cooperative agreement because DOE will share in the responsibilities for selecting research to be performed, long-range planning, review of scientific progress, defining interfaces between UGARF and other activities on the SRS, and project direction. The SREL complex is composed of U.S. Government-titled buildings and equipment, and DOE will continue to provide the UGARF with facilities and equipment on the SRS for this program.

DOE ROLES AND RESPONSIBILITIES: The Project Officer or his designee shall coordinate the day-to-day technical and administrative activities with the Participant. DOE will interact to assure that plans developed by UGARF to accomplish its program objectives are maintained to appropriately protect Site security and ES&H requirements. DOE will monitor the participant's performance through reporting requirements established in the agreement. Additionally, DOE will provide consultation, technical coordination and management surveillance. Finally, DOE will collaborate with the participant in funding and rebudgeting decisions.

The substantial involvement by DOE under this cooperative agreement will remain for the term of the cooperative agreement award, unless otherwise amended.

FY2007: SREL Scope of Work
and DOE Needs

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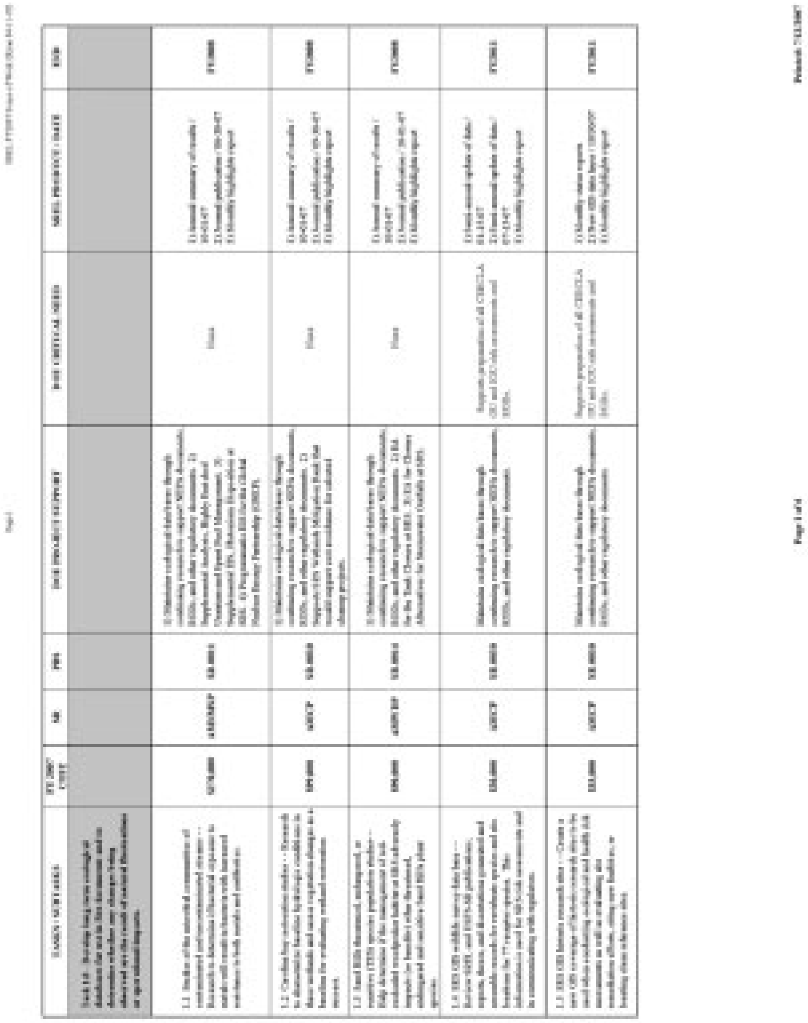
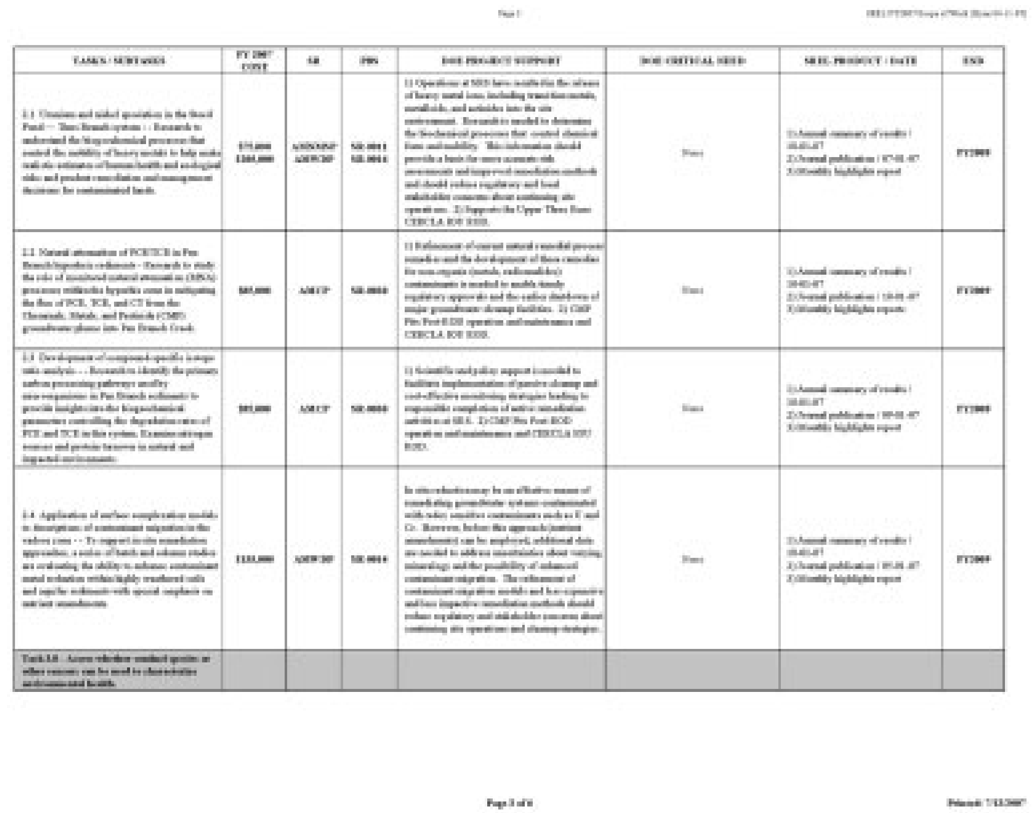


TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
1.6 Fish studies in Tim's Branch -- Research to determine metal concentrations in selected fish species along the stream gradient from upper Tim's Branch to its confluence with Upper Three Runs. These results will be combined with results from two existing preliminary studies to examine accumulation over time, use stable isotope analyses to assess trophic position of biota within different stream habitats relative to accumulation, and determine if the impoundments influence the concentration of metals in aquatic biota.	$80,000	AM/CP	SR-0040	Maintain ecological data base through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Upper Three Runs CERCLA IOU ROD.	1) Monthly status reports 2) Final data and results / 10-15-07 3) Monthly highlights report	FY2008
1.7 Fourmile Branch aquatic biota study -- This research will document contaminant levels and determine potential risks to piscivorous wildlife and possibly humans. Biota include an invertebrate and three fish species of different trophic levels to examine effects of trophic position. The project will focus on mercury, radiocesium, other metals, and tritium.	$79,000	AM/CP	SR-0040	Maintain ecological data base through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Fourmile Branch CERCLA IOU ROD.	1) Monthly status reports 2) Final data and reports / 10-15-07 3) Monthly highlights report	FY2008
1.8 D-Area Ash Basin herpetofauna study -- Field assessment will be conducted to quantify the herpetofauna community in the D-Area Ash Basin wetlands in comparison to similar uncontaminated sites. Part of this effort will be to develop general models that can be used to identify SRS areas that are healthy (or unhealthy) in terms of predicted diversity of herpetofauna.	$65,000	AM/CP	SR-0040	Maintain ecological data base through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Savannah River / Floodplain Swamp CERCLA IOU ROD.	1) Monthly status reports 2) Task report / 10-15-07 3) Monthly highlights report	FY2009
1.9 K-Area ecological studies -- Ecological baseline studies will be conducted in K-Area and adjacent watersheds to help assess the impacts of existing and future operational activities.	$200,000	AM/NM/SP	SR-0011	1) Maintain ecological data base through continuing research to support NEPA documents, RODs, and other regulatory documents. 2) Supplemental EIS, Storage of Surplus Plutonium Materials at SRS. 3) Establish an ecological baseline to enable future environmental assessment of impacts from plutonium processing (surveillance and disposition) facilities in K-Area.	None	1) Annual summary of results / 10-01-07 2) Monthly highlights report	FY2011
Task 2.0 - Determine the biogeochemical processes that control details of speciation and mobility of toxic metals, organic contaminants, and radionuclides.							



TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
[illegible]	$75,000 $160,000	[illegible]	SR-0011 SR-0014	[illegible]	None	1) Annual summary of results / [illegible] 2) Journal publication / [illegible] 3) Monthly highlights report	FY2009
[illegible]	$85,000	[illegible]	SR-0030	[illegible]	None	1) Annual summary of results / [illegible] 2) Journal publication / [illegible] 3) Monthly highlights reports	FY2009
[illegible]	$85,000	[illegible]	SR-0030	[illegible]	None	1) Annual summary of results / [illegible] 2) Journal publication / [illegible] 3) Monthly highlights report	FY2009
[illegible]	[illegible]	[illegible]	SR-0014	[illegible]	None	1) Annual summary of results / [illegible] 2) Journal publication / [illegible] 3) Monthly highlights report	FY2009
[illegible]							

TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
3.1. Alligator population and genetic studies - - Data from earlier and ongoing studies are being used to generate a population database as well as mutation rates in American alligators with the goal of using the alligator as a sentinel species for metal and radionuclide contamination on the SRS.	$165,000 $85,000	AMWDP AMNMSP	SR-0014 SR-0011	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. One method to characterize environmental is the development of sentinel species. The alligator is a candidate species for SRS. The development and use of sentinel species should reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Annual publication / 07-15-07 3) Monthly highlights report	FY2011
3.2. Using ecological indicators to determine disturbance associated with regional land use - - Environmental indicators developed at Fort Benning are being applied to disturbed areas at the SRS to determine if these indicators have long-term application for on-site land use decisions.	$80,000	AMWDP	SR-0014	Site operations can impact large areas of SRS. Ecological indicators can be used to determine what, if any, long-term impacts are associated with particular site uses. The development and appropriate use of such indicators should reduce regulatory and stakeholder concerns about ongoing site operations.	None	1) Modeling results and analysis / 07-01-07 2) Annual publication / 08-01-07 3) Monthly highlights report	FY2007
Task 4.0 - Determine how the form of a contaminant influences dose response and toxicity relationships.							
4.1. Dose response relationships in receptor species - ongoing studies using various receptor species, including earthworms, to assess dose-response relationships for metals and radionuclides.	$105,000	AMWDP	SR-0014	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. One method to characterize environmental is the development of sentinel species. The alligator is a candidate species for SRS. The development and use of sentinel species should reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Annual publication / 03-30-07 3) Monthly highlights report	FY2008
4.2. Dose response relationships of Medaka fish to gamma irradiation - - Current experiments focus on characterizing additional families of the model fish, Medaka, to better understand variance in response among individuals, response at different stages during spermatogenesis, response of chronic versus acute exposure, and transgenerational effects.	$50,000	AMWDP	SR-0014	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. Dose-response research Medaka research should help the site quantify radiological impacts to animal populations and could also reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Annual publication / 02-15-07 3) Monthly highlight report	FY2011
Task 5.0 - Determine the potential effects and interactions from exposure to mixed contaminants.							
5.1. Studies of the interaction of nickel and TCE in plants in the Steed Pond — Tims Branch ecosystem - - Research will focus on the effects of low toxic doses of nickel to hybrid poplar plants to determine effects on the formation of metabolites in the leaves and roots of the plants.	$50,000	AMCP	SR-0030	1) Data on natural remediation processes and the application of these processes for non-organic (metals, radionuclides) contaminants are needed to enable public acceptance, timely regulatory approvals, and an earlier shutdown of major groundwater cleanup facilities. 2) Supports the Upper Three Runs CERCLA ROD XXX.	None	1) Annual summary of results / 10-01-07 2) Annual publication / 02-01-07 3) Monthly highlights report	FY2009

TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
Task 6.0 - Define more clearly the risks from low dose-rate, chronic exposures to radiation.							
6.1 Effects of low dose rate ionizing radiation - Radiation effect studies using site amphibian species as model organisms to determine their radiosensitivity during egg development, larval period, and metamorphic period will continue as part of an effort to establish data for potential radiation protection guidelines for natural populations.	**$250,000** **$65,000**	**ADEWDP** **ADSNMNP**	**SR-0014** **SR-0011**	SRS has and will continue to treat, store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. The study of low-dose rate radiation effects on wildlife populations should reduce regulatory and local stakeholder concerns about continuing site operations including the Saltstone Facility, E-Area plutonium storage and disposition, and the proposed GNEP.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 10-01-07 3) Monthly highlights report	**FY2011**
Task 7.0 Identify the traits of native species and populations that best determine their suitability for use in remediation and restoration.							
7.1 Evaluation of native plants most successful in the restoration of Carolina bays - - To complete research/analyses on the final two years of this five- year study that suggests that passive revegetation can be a successful strategy for these wetlands.	**$94,000**	**ADEWDP**	**SR-0014**	Site operations can affect wetland areas of the site. The research and development of cost effective wetlands restoration techniques can be used to repair wetland damage caused by past and existing site operations. Proven restoration techniques would also have application in future clean up efforts.	None	1) Final data and analyses / 09-01-07 2) Journal publication / 10-01-07 3) Monthly highlights report	**FY2007**
7.2 Mixed Waste Management Facility (MWMF) remediation - - A cooperative effort with USFS-SR and SGCP to assist with site waste management and provide the evapo-transpiration efficiency estimates required for the Corrective Action Report (CAR).	**$90,000**	**ADECP**	**SR-0030**	1) Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Mixed Waste Management Facility CAR.	1) Annual summary of results / 10-01-07 2) Evapo-transpiration efficiency estimates / 02-15-07 3) Monthly highlights report	**FY2011**
Task 8.0 Determine the primary mechanisms by which natural attenuation and engineered remediation processes immobilize contaminants, and identify the appropriate geochemical and biological endpoints to assess sustainability.							
8.1 Evaluation of the effectiveness of hydroxyl apatite amendments on TCE degradation by microbes - - Complete research demonstrating that hydroxyl apatite amendments may offer a feasible approach to reducing metal toxicity to microorganisms at mixed waste sites, thereby enhancing the degradation of co-contaminants.	**$144,000**	**ADEWDP**	**SR-0014**	Co-contaminant metals can inhibit the microbial degradation processes responsible for attenuation and bioremediation of organic contaminants. Information is needed to understand these processes and interactions. Research results will be used for developing alternative in situ remediation methods for mixed contaminants. Results will also be used to evaluate co-contaminant metal toxicity against existing regulatory metals requirements (NPDES).	None	1) Annual summary of results / 10-01-07 2) Journal publication / 03-30-07 3) Monthly highlights report	**FY2008**

TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
E.2. Analyses of field-scale tracer data from B-Area subsurface injection experiments – Complete analyses of data obtained from a series of field-scale experiments using tritiated water, bromide, and two fluorobenzoates as tracers in the water table at SRS to study contaminant migration in the subsurface environment.	$90,000	ASP/TP	SR-0014	Hydrodynamic dispersion is an important factor controlling contaminant migration in the subsurface environment. However, few comprehensive three-dimensional data sets exist for critically evaluating solute dispersion. Results from the field-scale study in B-Area will provide important site-specific information for evaluating solute dispersion in B-Area and other site facilities.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 01-15-07 3) Monthly highlights report	FY2008
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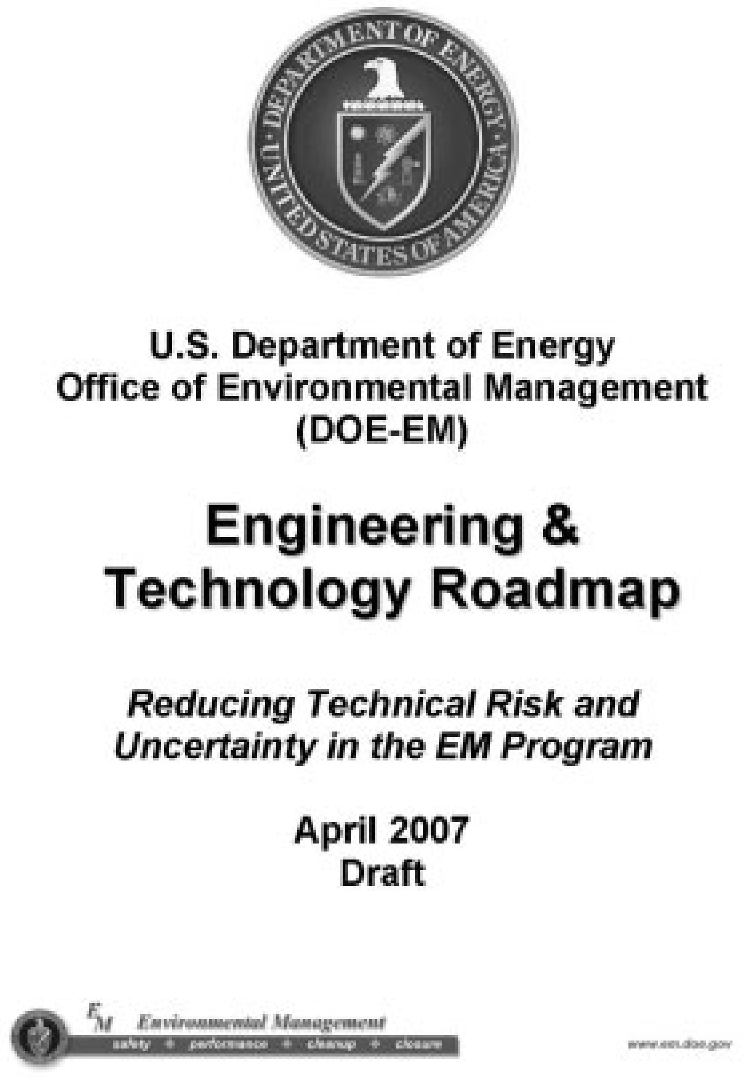
DOE-Office of Environmental Management's Engineering & Technology Roadmap:
Reducing Technical Risk and Uncertainty in the EM Program

(April 2007 Draft version)



U.S. Department of Energy
Office of Environmental Management
(DOE-EM)

Engineering & Technology Roadmap

Reducing Technical Risk and Uncertainty in the EM Program

April 2007
Draft

EM Environmental Management
safety ✦ performance ✦ cleanup ✦ closure

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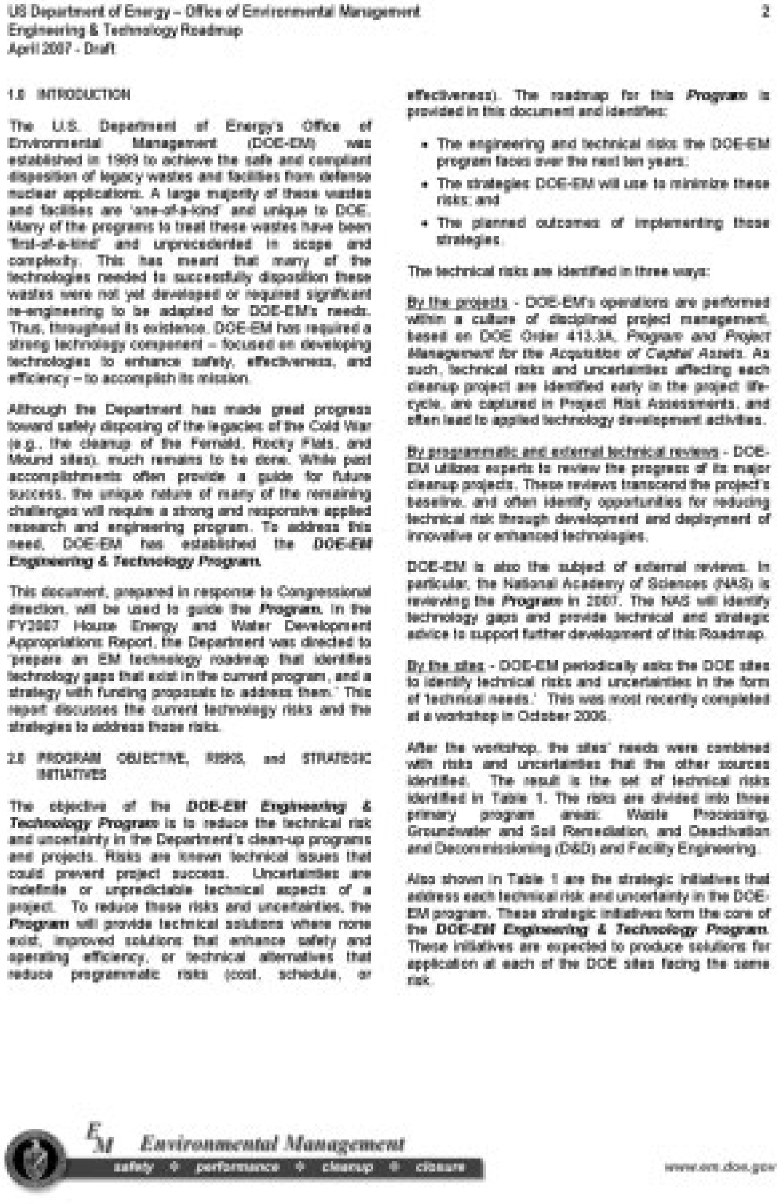


1.0 INTRODUCTION

The U.S. Department of Energy's Office of Environmental Management (DOE-EM) was established in 1989 to achieve the safe and compliant disposition of legacy wastes and facilities from defense nuclear applications. A large majority of these wastes and facilities are 'one-of-a-kind' and unique to DOE. Many of the programs to treat these wastes have been 'first-of-a-kind' and unprecedented in scope and complexity. This has meant that many of the technologies needed to successfully disposition these wastes were not yet developed or required significant re-engineering to be adapted for DOE-EM's needs. Thus, throughout its existence, DOE-EM has required a strong technology component – focused on developing technologies to enhance safety, effectiveness, and efficiency – to accomplish its mission.

Although the Department has made great progress toward safely disposing of the legacies of the Cold War (e.g., the cleanup of the Fernald, Rocky Flats, and Mound sites), much remains to be done. While past accomplishments often provide a guide for future success, the unique nature of many of the remaining challenges will require a strong and responsive applied research and engineering program. To address this need, DOE-EM has established the ***DOE-EM Engineering & Technology Program.***

This document, prepared in response to Congressional direction, will be used to guide the ***Program.*** In the FY2007 House Energy and Water Development Appropriations Report, the Department was directed to 'prepare an EM technology roadmap that identifies technology gaps that exist in the current program, and a strategy with funding proposals to address them.' This report discusses the current technology risks and the strategies to address those risks.

2.0 PROGRAM OBJECTIVE, RISKS, and STRATEGIC INITIATIVES

The objective of the ***DOE-EM Engineering & Technology Program*** is to reduce the technical risk and uncertainty in the Department's clean-up programs and projects. Risks are known technical issues that could prevent project success. Uncertainties are indefinite or unpredictable technical aspects of a project. To reduce these risks and uncertainties, the ***Program*** will provide technical solutions where none exist, improved solutions that enhance safety and operating efficiency, or technical alternatives that reduce programmatic risks (cost, schedule, or effectiveness). The roadmap for this ***Program*** is provided in this document and identifies:

- The engineering and technical risks the DOE-EM program faces over the next ten years;
- The strategies DOE-EM will use to minimize these risks; and
- The planned outcomes of implementing those strategies.

The technical risks are identified in three ways:

By the projects - DOE-EM's operations are performed within a culture of disciplined project management, based on DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*. As such, technical risks and uncertainties affecting each cleanup project are identified early in the project life-cycle, are captured in Project Risk Assessments, and often lead to applied technology development activities.

By programmatic and external technical reviews - DOE-EM utilizes experts to review the progress of its major cleanup projects. These reviews transcend the project's baseline, and often identify opportunities for reducing technical risk through development and deployment of innovative or enhanced technologies.

DOE-EM is also the subject of external reviews. In particular, the National Academy of Sciences (NAS) is reviewing the *Program* in 2007. The NAS will identify technology gaps and provide technical and strategic advice to support further development of this Roadmap.

By the sites - DOE-EM periodically asks the DOE sites to identify technical risks and uncertainties in the form of 'technical needs.' This was most recently completed at a workshop in October 2006.

After the workshop, the sites' needs were combined with risks and uncertainties that the other sources identified. The result is the set of technical risks identified in Table 1. The risks are divided into three primary program areas: Waste Processing, Groundwater and Soil Remediation, and Deactivation and Decommissioning (D&D) and Facility Engineering.

Also shown in Table 1 are the strategic initiatives that address each technical risk and uncertainty in the DOE-EM program. These strategic initiatives form the core of the ***DOE-EM Engineering & Technology Program.*** These initiatives are expected to produce solutions for application at each of the DOE sites facing the same risk.

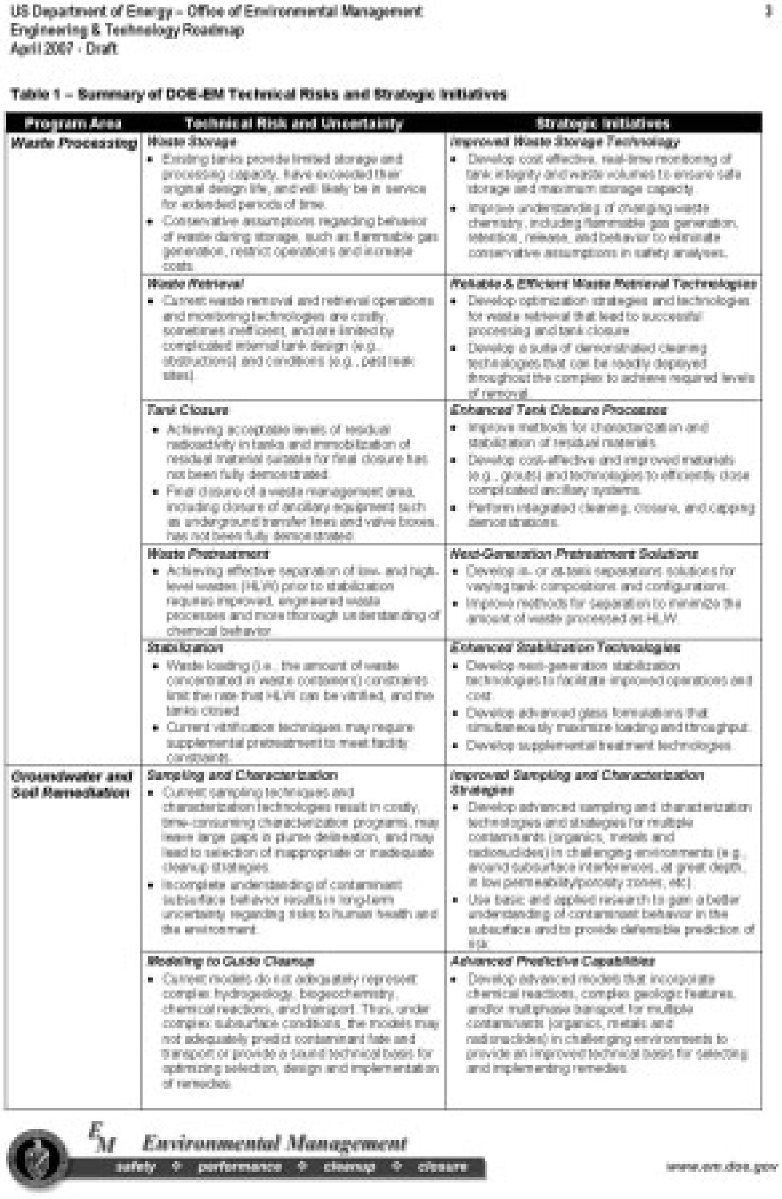
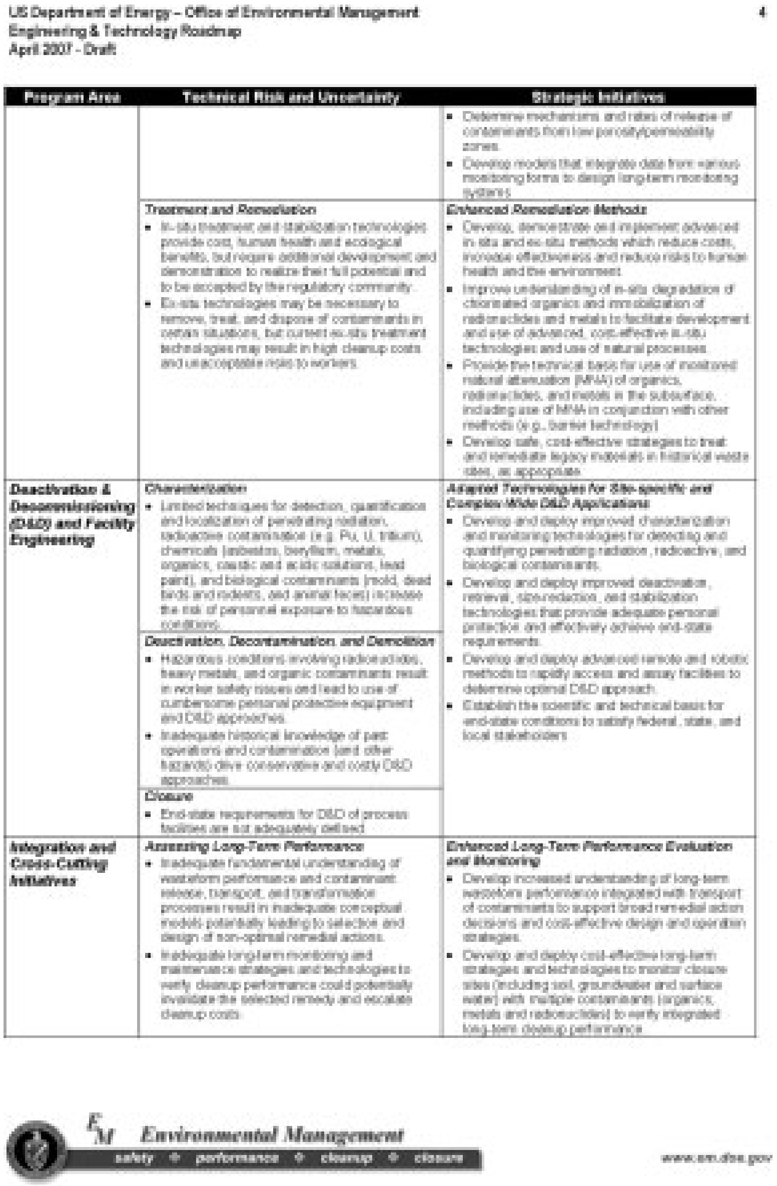


Table 1 – Summary of DOE-EM Technical Risks and Strategic Initiatives

Program Area	Technical Risk and Uncertainty	Strategic Initiatives
Waste Processing	***Waste Storage*** • Existing tanks provide limited storage and processing capacity, have exceeded their original design life, and will likely be in service for extended periods of time. • Conservative assumptions regarding behavior of waste during storage, such as flammable gas generation, restrict operations and increase costs.	***Improved Waste Storage Technology*** • Develop cost effective, real-time monitoring of tank integrity and waste volumes to ensure safe storage and maximum storage capacity. • Improve understanding of changing waste chemistry, including flammable gas generation, retention, release, and behavior to eliminate conservative assumptions in safety analyses.
	Waste Retrieval • Current waste removal and retrieval operations and monitoring technologies are costly, sometimes inefficient, and are limited by complicated internal tank design (e.g., obstructions) and conditions (e.g., past leak sites).	***Reliable & Efficient Waste Retrieval Technologies*** • Develop optimization strategies and technologies for waste retrieval that lead to successful processing and tank closure. • Develop a suite of demonstrated cleaning technologies that can be readily deployed throughout the complex to achieve required levels of removal.
	Tank Closure • Achieving acceptable levels of residual radioactivity in tanks and immobilization of residual material suitable for final closure has not been fully demonstrated. • Final closure of a waste management area, including closure of ancillary equipment such as underground transfer lines and valve boxes, has not been fully demonstrated.	***Enhanced Tank Closure Processes*** • Improve methods for characterization and stabilization of residual materials. • Develop cost-effective and improved materials (e.g., grouts) and technologies to efficiently close complicated ancillary systems. • Perform integrated cleaning, closure, and capping demonstrations.
	Waste Pretreatment • Achieving effective separation of low- and high-level wastes (HLW) prior to stabilization requires improved, engineered waste processes and more thorough understanding of chemical behavior.	***Next-Generation Pretreatment Solutions*** • Develop in- or at-tank separations solutions for varying tank compositions and configurations. • Improve methods for separation to minimize the amount of waste processed as HLW.
	Stabilization • Waste loading (i.e., the amount of waste concentrated in waste container(s)) constraints limit the rate that HLW can be vitrified, and the tanks closed. • Current vitrification techniques may require supplemental pretreatment to meet facility constraints.	***Enhanced Stabilization Technologies*** • Develop next-generation stabilization technologies to facilitate improved operations and cost. • Develop advanced glass formulations that simultaneously maximize loading and throughput. • Develop supplemental treatment technologies.
Groundwater and Soil Remediation	***Sampling and Characterization*** • Current sampling techniques and characterization technologies result in costly, time-consuming characterization programs, may leave large gaps in plume delineation, and may lead to selection of inappropriate or inadequate cleanup strategies. • Incomplete understanding of contaminant subsurface behavior results in long-term uncertainty regarding risks to human health and the environment.	***Improved Sampling and Characterization Strategies*** • Develop advanced sampling and characterization technologies and strategies for multiple contaminants (organics, metals and radionuclides) in challenging environments (e.g., around subsurface interferences, at great depth, in low permeability/porosity zones, etc). • Use basic and applied research to gain a better understanding of contaminant behavior in the subsurface and to provide defensible prediction of risk.
	Modeling to Guide Cleanup • Current models do not adequately represent complex hydrogeology, biogeochemistry, chemical reactions, and transport. Thus, under complex subsurface conditions, the models may not adequately predict contaminant fate and transport or provide a sound technical basis for optimizing selection, design and implementation of remedies.	***Advanced Predictive Capabilities*** • Develop advanced models that incorporate chemical reactions, complex geologic features, and/or multiphase transport for multiple contaminants (organics, metals and radionuclides) in challenging environments to provide an improved technical basis for selecting and implementing remedies.



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Program Area	Technical Risk and Uncertainty	Strategic Initiatives
		▪ Determine mechanisms and rates of release of contaminants from low porosity/permeability zones. ▪ Develop models that integrate data from various monitoring forms to design long-term monitoring systems.
	Treatment and Remediation ▪ In-situ treatment and stabilization technologies provide cost, human health and ecological benefits, but require additional development and demonstration to realize their full potential and to be accepted by the regulatory community. ▪ Ex-situ technologies may be necessary to remove, treat, and dispose of contaminants in certain situations, but current ex-situ treatment technologies may result in high cleanup costs and unacceptable risks to workers.	***Enhanced Remediation Methods*** ▪ Develop, demonstrate and implement advanced in situ and ex-situ methods which reduce costs, increase effectiveness and reduce risks to human health and the environment. ▪ Improve understanding of in-situ degradation of chlorinated organics and immobilization of radionuclides and metals to facilitate development and use of advanced, cost-effective in-situ technologies and use of natural processes. ▪ Provide the technical basis for use of monitored natural attenuation (MNA) of organics, radionuclides, and metals in the subsurface, including use of MNA in conjunction with other methods (e.g., barrier technology). ▪ Develop safe, cost-effective strategies to treat and remediate legacy materials in historical waste sites, as appropriate.
Deactivation & Decommissioning (D&D) and Facility Engineering	***Characterization*** ▪ Limited techniques for detection, quantification and localization of penetrating radiation, radioactive contamination (e.g. Pu, U, tritium), chemicals (asbestos, beryllium, metals, organics, caustic and acidic solutions, lead paint), and biological contaminants (mold, dead birds and rodents, and animal feces) increase the risk of personnel exposure to hazardous conditions.	***Adapted Technologies for Site-specific and Complex-Wide D&D Applications*** ▪ Develop and deploy improved characterization and monitoring technologies for detecting and quantifying penetrating radiation, radioactive, and biological contaminants. ▪ Develop and deploy improved deactivation, retrieval, size-reduction, and stabilization technologies that provide adequate personal protection and effectively achieve end-state requirements. ▪ Develop and deploy advanced remote and robotic methods to rapidly access and assay facilities to determine optimal D&D approach. ▪ Establish the scientific and technical basis for end-state conditions to satisfy federal, state, and local stakeholders.
	Deactivation, Decontamination, and Demolition ▪ Hazardous conditions involving radionuclides, heavy metals, and organic contaminants result in worker safety issues and lead to use of cumbersome personal protective equipment and D&D approaches. ▪ Inadequate historical knowledge of past operations and contamination (and other hazards) drive conservative and costly D&D approaches.	
	Closure ▪ End-state requirements for D&D of process facilities are not adequately defined.	
Integration and Cross-Cutting Initiatives	***Assessing Long-Term Performance*** ▪ Inadequate fundamental understanding of wasteform performance and contaminant release, transport, and transformation processes result in inadequate conceptual models potentially leading to selection and design of non-optimal remedial actions. ▪ Inadequate long-term monitoring and maintenance strategies and technologies to verify cleanup performance could potentially invalidate the selected remedy and escalate cleanup costs.	***Enhanced Long-Term Performance Evaluation and Monitoring*** ▪ Develop increased understanding of long-term wasteform performance integrated with transport of contaminants to support broad remedial action decisions and cost-effective design and operation strategies. ▪ Develop and deploy cost-effective long-term strategies and technologies to monitor closure sites (including soil, groundwater and surface water) with multiple contaminants (organics, metals and radionuclides) to verify integrated long-term cleanup performance.

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3.0 ENGINEERING AND TECHNOLOGY PROGRAM MANAGEMENT

To achieve maximum value of the invested resources, DOE-EM manages the program based on these key principles:

- Utilizing sound project management practices;
- Focused development of cost-effective transformational technologies to address high-risk areas to reduce costs and technical uncertainties;
- Integration across all DOE-EM program areas;
- Utilizing existing technologies and information from other programs (e.g., DOE Program Offices, national laboratories, and other Federal Agencies) to the extent practical;
- Self assessment using the best available resources (including the ongoing NAS study which will provide strategic advice to DOE-EM, and structured External Technical Reviews) to identify technology needs and issues and to develop programs to address these risks; and
- Tracking/trending of progress through disciplined performance measures.

These principles provide the foundation for organizing and managing the ***DOE-EM Engineering & Technology Program***.

A successful applied technology and engineering program for DOE-EM will be comprised of programs designated as 'technology-pull' (i.e., driven by project needs) and 'technology push' (i.e., driven by insertion of technologies that are better, faster, or cheaper than the baseline technology).

The risks and initiatives outlined above provide a summary of the technical issues currently facing DOE-EM. Resources to address these needs are provided by a variety of means including both direct site- or project-supported technology development and Headquarters supported technical support and technology development.

In order to provide effective integration and operation of the site projects and Headquarters activities, DOE-EM utilizes an iterative process, schematically shown in Figure 1, for ensuring that resources are provided to address the most pressing technology risk and those that provide the biggest 'return on investment' across the DOE-EM mission areas.

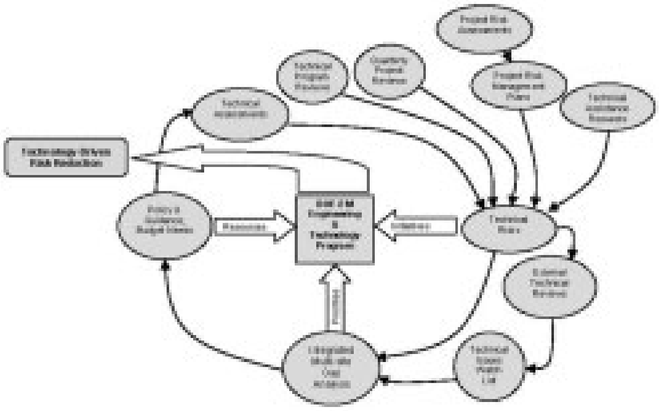
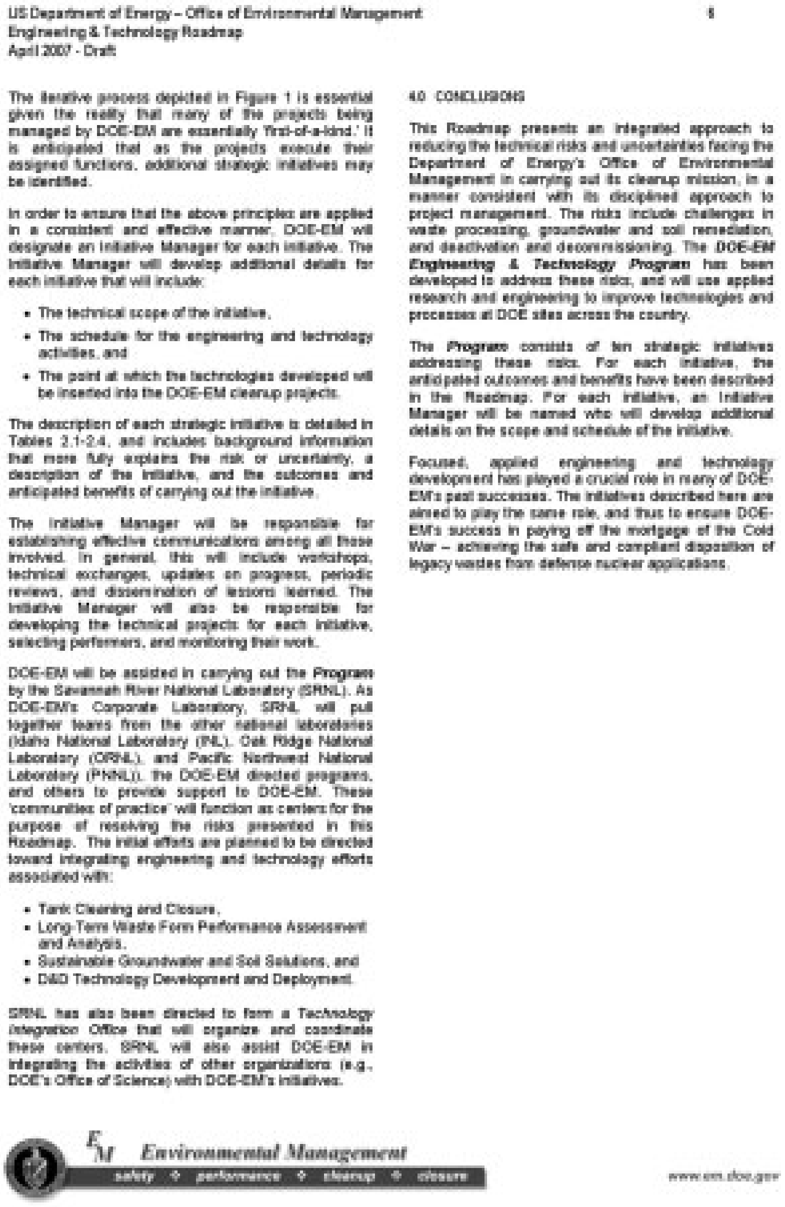

Project Risk Assessments
Technical Program Reviews
Quarterly Project Reviews
Project Risk Management Plans
Technical Assistance Requests
Technical Assessments
Technology Driven Risk Reduction
Resources
DOE-EM Engineering & Technology Program
Initiatives
Technical Risks
External Technical Reviews
Priorities
Integrated Multi-site Gap Analysis

Figure 1 – DOE-EM Engineering & Technology Program Integration



The iterative process depicted in Figure 1 is essential given the reality that many of the projects being managed by DOE-EM are essentially 'first-of-a-kind.' It is anticipated that as the projects execute their assigned functions, additional strategic initiatives may be identified.

In order to ensure that the above principles are applied in a consistent and effective manner, DOE-EM will designate an Initiative Manager for each initiative. The Initiative Manager will develop additional details for each initiative that will include:

- The technical scope of the initiative,
- The schedule for the engineering and technology activities, and
- The point at which the technologies developed will be inserted into the DOE-EM cleanup projects.

The description of each strategic initiative is detailed in Tables 2.1-2.4, and includes background information that more fully explains the risk or uncertainty, a description of the initiative, and the outcomes and anticipated benefits of carrying out the initiative.

The Initiative Manager will be responsible for establishing effective communications among all those involved. In general, this will include workshops, technical exchanges, updates on progress, periodic reviews, and dissemination of lessons learned. The Initiative Manager will also be responsible for developing the technical projects for each initiative, selecting performers, and monitoring their work.

DOE-EM will be assisted in carrying out the **Program** by the Savannah River National Laboratory (SRNL). As DOE-EM's Corporate Laboratory, SRNL will pull together teams from the other national laboratories (Idaho National Laboratory (INL), Oak Ridge National Laboratory (ORNL), and Pacific Northwest National Laboratory (PNNL)), the DOE-EM directed programs, and others to provide support to DOE-EM. These 'communities of practice' will function as centers for the purpose of resolving the risks presented in this Roadmap. The initial efforts are planned to be directed toward integrating engineering and technology efforts associated with:

- Tank Cleaning and Closure,
- Long-Term Waste Form Performance Assessment and Analysis,
- Sustainable Groundwater and Soil Solutions, and
- D&D Technology Development and Deployment.

SRNL has also been directed to form a *Technology Integration Office* that will organize and coordinate these centers. SRNL will also assist DOE-EM in integrating the activities of other organizations (e.g., DOE's Office of Science) with DOE-EM's initiatives.

4.0 CONCLUSIONS

This Roadmap presents an integrated approach to reducing the technical risks and uncertainties facing the Department of Energy's Office of Environmental Management in carrying out its cleanup mission, in a manner consistent with its disciplined approach to project management. The risks include challenges in waste processing, groundwater and soil remediation, and deactivation and decommissioning. The ***DOE-EM Engineering & Technology Program*** has been developed to address these risks, and will use applied research and engineering to improve technologies and processes at DOE sites across the country.

The ***Program*** consists of ten strategic initiatives addressing these risks. For each initiative, the anticipated outcomes and benefits have been described in the Roadmap. For each initiative, an Initiative Manager will be named who will develop additional details on the scope and schedule of the initiative.

Focused, applied engineering and technology development has played a crucial role in many of DOE-EM's past successes. The initiatives described here are aimed to play the same role, and thus to ensure DOE-EM's success in paying off the mortgage of the Cold War – achieving the safe and compliant disposition of legacy wastes from defense nuclear applications.

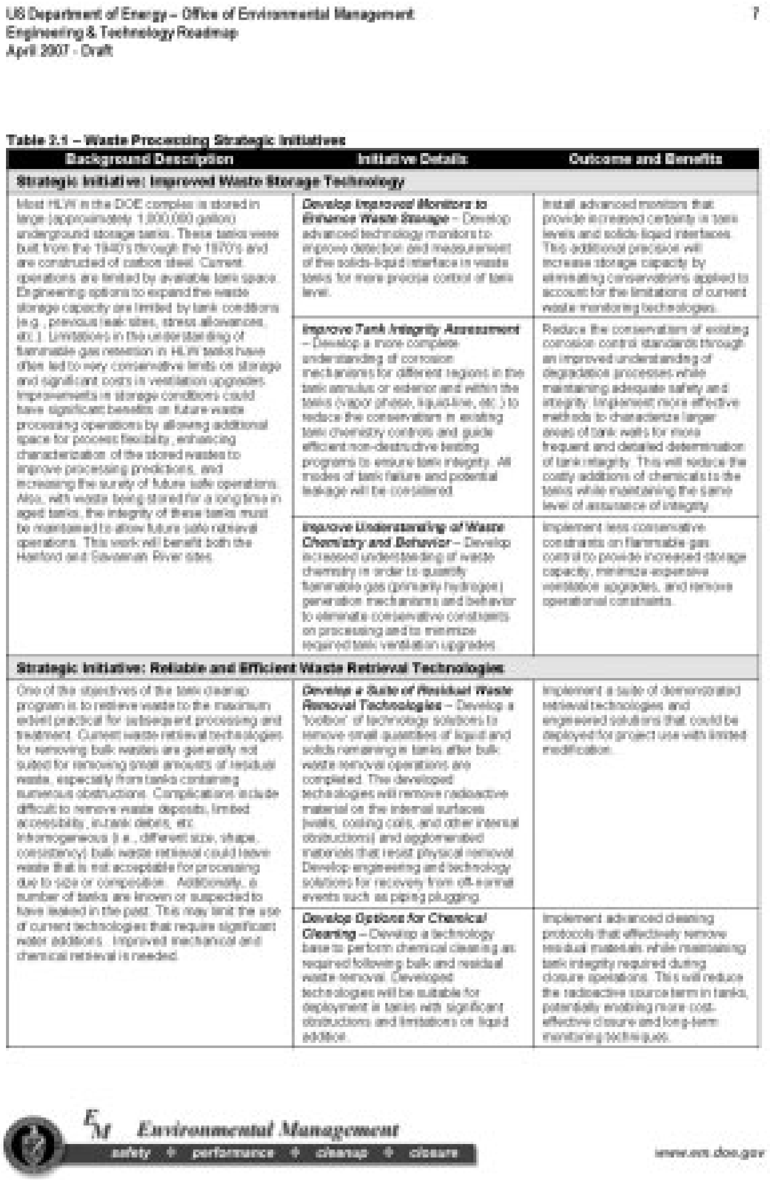


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Table 2.1 – Waste Processing Strategic Initiatives

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Improved Waste Storage Technology		
Most HLW in the DOE complex is stored in large (approximately 1,000,000 gallon) underground storage tanks. These tanks were built from the 1940's through the 1970's and are constructed of carbon steel. Current operations are limited by available tank space. Engineering options to expand the waste storage capacity are limited by tank conditions (e.g., previous leak sites, stress allowances, etc.). Limitations in the understanding of flammable gas retention in HLW tanks have often led to very conservative limits on storage and significant costs in ventilation upgrades. Improvements in storage conditions could have significant benefits on future waste processing operations by allowing additional space for process flexibility, enhancing characterization of the stored wastes to improve processing predictions, and increasing the surety of future safe operations. Also, with waste being stored for a long time in aged tanks, the integrity of these tanks must be maintained to allow future safe retrieval operations. This work will benefit both the Hanford and Savannah River sites.	***Develop Improved Monitors to Enhance Waste Storage*** – Develop advanced technology monitors to improve detection and measurement of the solids-liquid interface in waste tanks for more precise control of tank level.	Install advanced monitors that provide increased certainty in tank levels and solids-liquid interfaces. This additional precision will increase storage capacity by eliminating conservatisms applied to account for the limitations of current waste monitoring technologies.
	Improve Tank Integrity Assessment – Develop a more complete understanding of corrosion mechanisms for different regions in the tank annulus or exterior and within the tanks (vapor phase, liquid-line, etc.) to reduce the conservatism in existing tank chemistry controls and guide efficient non-destructive testing programs to ensure tank integrity. All modes of tank failure and potential leakage will be considered.	Reduce the conservatism of existing corrosion control standards through an improved understanding of degradation processes while maintaining adequate safety and integrity. Implement more effective methods to characterize larger areas of tank walls for more frequent and detailed determination of tank integrity. This will reduce the costly additions of chemicals to the tanks while maintaining the same level of assurance of integrity.
	Improve Understanding of Waste Chemistry and Behavior – Develop increased understanding of waste chemistry in order to quantify flammable gas (primarily hydrogen) generation mechanisms and behavior to eliminate conservative constraints on processing and to minimize required tank ventilation upgrades.	Implement less conservative constraints on flammable gas control to provide increased storage capacity, minimize expensive ventilation upgrades, and remove operational constraints.
Strategic Initiative: Reliable and Efficient Waste Retrieval Technologies		
One of the objectives of the tank cleanup program is to retrieve waste to the maximum extent practical for subsequent processing and treatment. Current waste retrieval technologies for removing bulk wastes are generally not suited for removing small amounts of residual waste, especially from tanks containing numerous obstructions. Complications include difficult to remove waste deposits, limited accessibility, in-tank debris, etc. Inhomogeneous (i.e., different size, shape, consistency) bulk waste retrieval could leave waste that is not acceptable for processing due to size or composition. Additionally, a number of tanks are known or suspected to have leaked in the past. This may limit the use of current technologies that require significant water additions. Improved mechanical and chemical retrieval is needed.	***Develop a Suite of Residual Waste Removal Technologies*** – Develop a 'toolbox' of technology solutions to remove small quantities of liquid and solids remaining in tanks after bulk waste removal operations are completed. The developed technologies will remove radioactive material on the internal surfaces (walls, cooling coils, and other internal obstructions) and agglomerated materials that resist physical removal. Develop engineering and technology solutions for recovery from off-normal events such as piping plugging.	Implement a suite of demonstrated retrieval technologies and engineered solutions that could be deployed for project use with limited modification.
	Develop Options for Chemical Cleaning – Develop a technology base to perform chemical cleaning as required following bulk and residual waste removal. Developed technologies will be suitable for deployment in tanks with significant obstructions and limitations on liquid addition.	Implement advanced cleaning protocols that effectively remove residual materials while maintaining tank integrity required during closure operations. This will reduce the radioactive source term in tanks, potentially enabling more cost-effective closure and long-term monitoring techniques.

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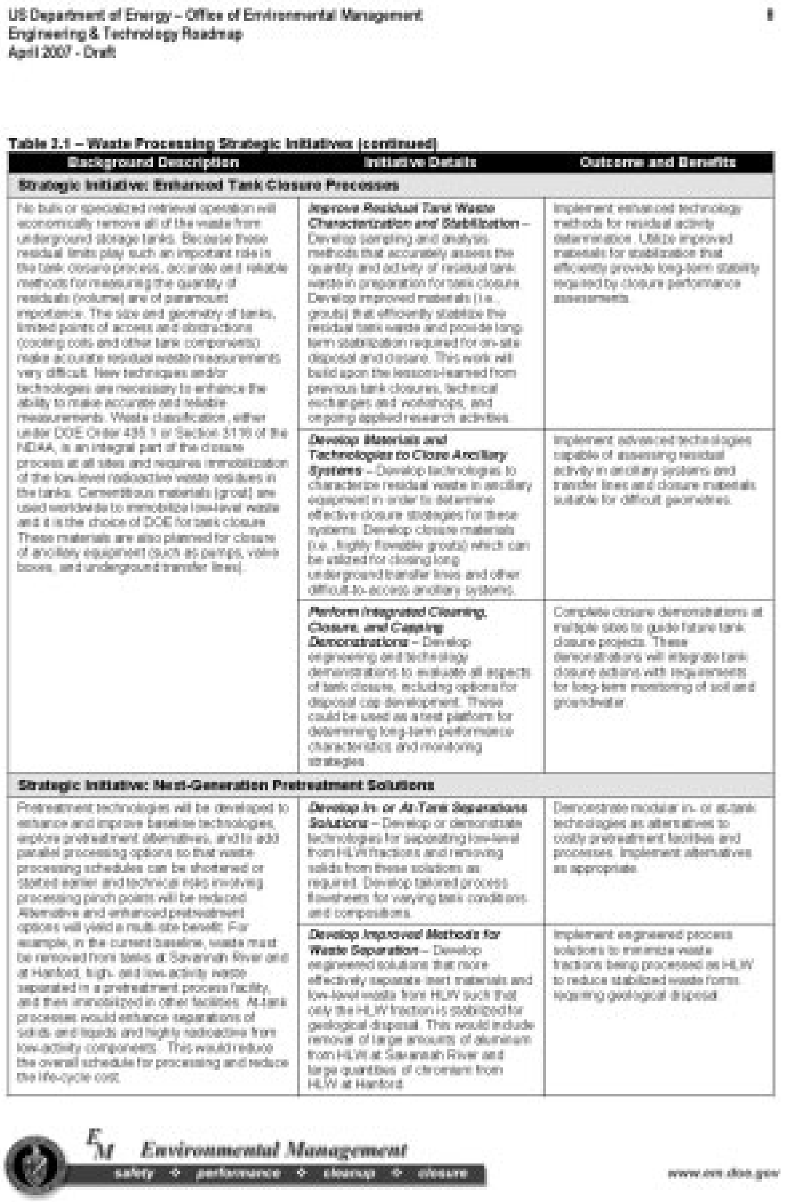

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Table 3.1 – Waste Processing Strategic Initiatives (continued)

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Enhanced Tank Closure Processes		
No bulk or specialized retrieval operation will economically remove all of the waste from underground storage tanks. Because these residual limits play such an important role in the tank closure process, accurate and reliable methods for measuring the quantity of residuals (volume) are of paramount importance. The size and geometry of tanks, limited points of access and obstructions (cooling coils and other tank components) make accurate residual waste measurements very difficult. New techniques and/or technologies are necessary to enhance the ability to make accurate and reliable measurements. Waste classification, either under DOE Order 435.1 or Section 3116 of the NDAA, is an integral part of the closure process at all sites and requires immobilization of the low-level radioactive waste residues in the tanks. Cementitious materials (grout) are used worldwide to immobilize low-level waste and it is the choice of DOE for tank closure. These materials are also planned for closure of ancillary equipment (such as pumps, valve boxes, and underground transfer lines).	***Improve Residual Tank Waste Characterization and Stabilization*** – Develop sampling and analysis methods that accurately assess the quantity and activity of residual tank waste in preparation for tank closure. Develop improved materials (i.e., grouts) that efficiently stabilize the residual tank waste and provide long-term stabilization required for on-site disposal and closure. This work will build upon the lessons-learned from previous tank closures, technical exchanges and workshops, and ongoing applied research activities.	Implement enhanced technology methods for residual activity determination. Utilize improved materials for stabilization that efficiently provide long-term stability required by closure performance assessments.
	Develop Materials and Technologies to Close Ancillary Systems – Develop technologies to characterize residual waste in ancillary equipment in order to determine effective closure strategies for these systems. Develop closure materials (i.e., highly flowable grouts) which can be utilized for closing long underground transfer lines and other difficult-to-access ancillary systems.	Implement advanced technologies capable of assessing residual activity in ancillary systems and transfer lines and closure materials suitable for difficult geometries.
	Perform Integrated Cleaning, Closure, and Capping Demonstrations – Develop engineering and technology demonstrations to evaluate all aspects of tank closure, including options for disposal cap development. These could be used as a test platform for determining long-term performance characteristics and monitoring strategies.	Complete closure demonstrations at multiple sites to guide future tank closure projects. These demonstrations will integrate tank closure actions with requirements for long-term monitoring of soil and groundwater.
Strategic Initiative: Next-Generation Pretreatment Solutions		
Pretreatment technologies will be developed to enhance and improve baseline technologies, explore pretreatment alternatives, and to add parallel processing options so that waste processing schedules can be shortened or started earlier and technical risks involving processing pinch points will be reduced. Alternative and enhanced pretreatment options will yield a multi-site benefit. For example, in the current baseline, waste must be removed from tanks at Savannah River and at Hanford, high- and low-activity waste separated in a pretreatment process facility, and then immobilized in other facilities. At-tank processes would enhance separations of solids and liquids and highly radioactive from low-activity components. This would reduce the overall schedule for processing and reduce the life-cycle cost.	***Develop In- or At-Tank Separations Solutions*** – Develop or demonstrate technologies for separating low-level from HLW fractions and removing solids from these solutions as required. Develop tailored process flowsheets for varying tank conditions and compositions.	Demonstrate modular in- or at-tank technologies as alternatives to costly pretreatment facilities and processes. Implement alternatives as appropriate.
	Develop Improved Methods for Waste Separation – Develop engineered solutions that more effectively separate inert materials and low-level waste from HLW such that only the HLW fraction is stabilized for geological disposal. This would include removal of large amounts of aluminum from HLW at Savannah River and large quantities of chromium from HLW at Hanford.	Implement engineered process solutions to minimize waste fractions being processed as HLW to reduce stabilized waste forms requiring geological disposal.

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Table 2.1 – Waste Processing Strategic Initiatives (continued)

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Enhanced Stabilization Technologies		
This initiative would improve the campaign to vitrify waste through applied research to improve all aspects of the vitrification process. Improvements have a multi-site benefit and yield significant savings. Alternative or improved melter designs may enable operations at elevated temperatures and higher throughput in the same plant footprint. Improved glass formulations that allow a higher waste loading would reduce the number of waste packages and improve throughput, both of which have significant benefits. Incremental gains could benefit current processing activities, while exploratory work on future wastes would also be used in planning activities. An overall loading improvement of a few percent could shorten the waste processing schedule by over a year and potentially save over $1 billion. Additionally, there are some wastes that will require extensive pretreatment for processing at a large vitrification facility. For these wastes, supplemental treatment operations are needed.	***Develop Next-Generation Melter Technology*** – Develop alternative technologies for melter operation that permit increased waste loading and/or higher melter throughput. In current planning, the estimated melter lifetime is approximately five years before replacement. Improved melter designs will provide improved operations, longer melter life, and increased loading (thereby reducing the number of HLW canisters). This work will utilize results from the DOE-EM International Program and other DOE-EM investments to improve throughput and waste loading through advanced melter designs.	Install next-generation melters at waste processing facilities to replace current joule-heated melters and improve operations at the Defense Waste Processing Facility and the Waste Treatment Plant.
	Develop Advanced Glass Formulations – Develop improvements in the existing vitrification processes that allow increased waste loading and greater throughput. This, in turn, would reduce the life cycle of waste processing operations and/or the number of HLW canisters that must be disposed in a deep geological repository. Refine the predictive models used for operation of the waste processing facilities and integrating pretreatment and stabilization specifications to provide enhanced operational control and improved life-cycle management. This work will utilize the investments being made by National Laboratories and academia aimed at improving existing process operations.	Incorporate improved glass formulations into existing processing operations with minimal in-plant testing or verification. Minor improvements in waste loading (on the order of a few percent) or reductions in cycle time (on the order of a few hours per canister produced) have been demonstrated to yield significant cost savings.
	Develop Supplemental Treatment Processes - Develop bulk vitrification, steam reforming, or other supplemental treatment processes required to meet project needs. This work will build on the Demonstration Bulk Vitrification System (DBVS) project at the Hanford site and the steam reforming process development being performed to support the Sodium Bearing Waste Treatment project at the Idaho site.	Complete demonstrations of supplemental treatment technologies and deploy those technologies as needed to support project operations.

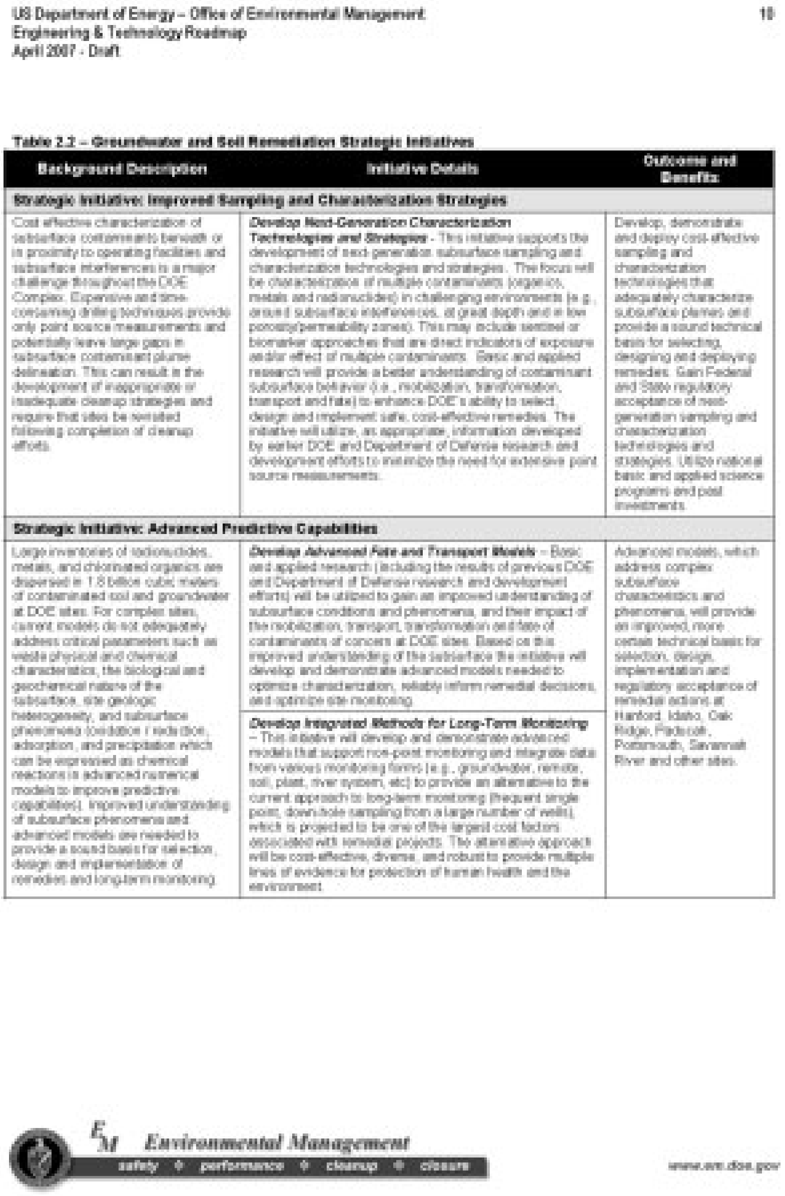


Table 2.2 – Groundwater and Soil Remediation Strategic Initiatives

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Improved Sampling and Characterization Strategies		
Cost effective characterization of subsurface contaminants beneath or in proximity to operating facilities and subsurface interferences is a major challenge throughout the DOE Complex. Expensive and time-consuming drilling techniques provide only point source measurements and potentially leave large gaps in subsurface contaminant plume delineation. This can result in the development of inappropriate or inadequate cleanup strategies and require that sites be revisited following completion of cleanup efforts.	***Develop Next-Generation Characterization Technologies and Strategies*** - This initiative supports the development of next generation subsurface sampling and characterization technologies and strategies. The focus will be characterization of multiple contaminants (organics, metals and radionuclides) in challenging environments (e.g., around subsurface interferences, at great depth and in low porosity/permeability zones). This may include sentinel or biomarker approaches that are direct indicators of exposure and/or effect of multiple contaminants. Basic and applied research will provide a better understanding of contaminant subsurface behavior (i.e., mobilization, transformation, transport and fate) to enhance DOE's ability to select, design and implement safe, cost-effective remedies. The initiative will utilize, as appropriate, information developed by earlier DOE and Department of Defense research and development efforts to minimize the need for extensive point source measurements.	Develop, demonstrate and deploy cost-effective sampling and characterization technologies that adequately characterize subsurface plumes and provide a sound technical basis for selecting, designing and deploying remedies. Gain Federal and State regulatory acceptance of next-generation sampling and characterization technologies and strategies. Utilize national basic and applied science programs and past investments.
Strategic Initiative: Advanced Predictive Capabilities		
Large inventories of radionuclides, metals, and chlorinated organics are dispersed in 1.8 billion cubic meters of contaminated soil and groundwater at DOE sites. For complex sites, current models do not adequately address critical parameters such as waste physical and chemical characteristics, the biological and geochemical nature of the subsurface, site geologic heterogeneity, and subsurface phenomena (oxidation / reduction, adsorption, and precipitation which can be expressed as chemical reactions in advanced numerical models to improve predictive capabilities). Improved understanding of subsurface phenomena and advanced models are needed to provide a sound basis for selection, design and implementation of remedies and long-term monitoring.	***Develop Advanced Fate and Transport Models*** – Basic and applied research (including the results of previous DOE and Department of Defense research and development efforts) will be utilized to gain an improved understanding of subsurface conditions and phenomena, and their impact of the mobilization, transport, transformation and fate of contaminants of concern at DOE sites. Based on this improved understanding of the subsurface the initiative will develop and demonstrate advanced models needed to optimize characterization, reliably inform remedial decisions, and optimize site monitoring.	Advanced models, which address complex subsurface characteristics and phenomena, will provide an improved, more certain technical basis for selection, design, implementation and regulatory acceptance of remedial actions at Hanford, Idaho, Oak Ridge, Paducah, Portsmouth, Savannah River and other sites.
	Develop Integrated Methods for Long-Term Monitoring – This initiative will develop and demonstrate advanced models that support non-point monitoring and integrate data from various monitoring forms (e.g., groundwater, remote, soil, plant, river system, etc) to provide an alternative to the current approach to long-term monitoring (frequent single point, down-hole sampling from a large number of wells), which is projected to be one of the largest cost factors associated with remedial projects. The alternative approach will be cost-effective, diverse, and robust to provide multiple lines of evidence for protection of human health and the environment.	

Table 2.2 – Groundwater and Soil Remediation Strategic Initiatives (continued)

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Enhanced Remediation Methods		
Currently, DOE employs remediation technologies that rely heavily on expensive ex-situ methods (i.e., pump and treat) or limited in-situ (i.e., steam stripping) techniques. Cost-effective in-situ technologies need to be developed and demonstrated. As our knowledge and understanding of the mechanisms for fate and transport due to natural system processes improves, sustainable, in-situ approaches can be designed. These approaches will better balance in-situ technology with enhanced and natural attenuation to allow maximum use of natural system capacity and processes. Where in-situ methods are not practical, improved ex-situ techniques are required. Historical waste sites present unique challenges to retrieve, treat, and remediate the variety of wastes at these sites. These include contaminated soils, buried drums, and other materials posing an environmental risk.	***Develop Advanced Remediation Methods*** – The initiative will develop improved in-situ remediation technologies that reduce costs, increase effectiveness, and better protect workers and the environment. Improvements will include development and demonstration of passive systems such as permeable reactive barriers, nanoparticle technology, bioremediation, phytoremediation, and long-term barriers. Improvements will also include development of technical basis for using monitored natural or enhanced attenuation. These approaches are both sustainable and cost-effective. This initiative will also address retrieval of buried waste and other materials where necessary.	Deploy advanced cost-effective and safe remediation methods and strategies that target the primary contaminants that drive performance assessments and environmental impact.

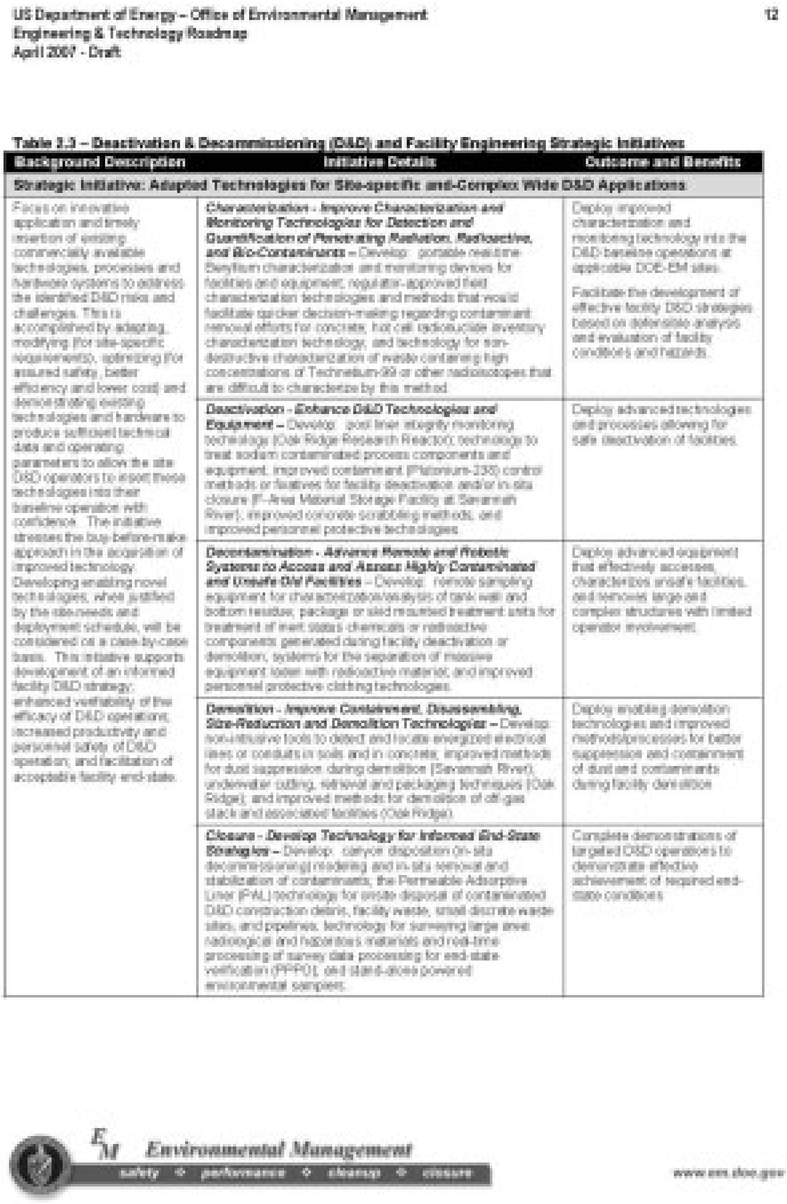


Table 3.3 – Deactivation & Decommissioning (D&D) and Facility Engineering Strategic Initiatives

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Adapted Technologies for Site-specific and-Complex Wide D&D Applications		
Focus on innovative application and timely insertion of existing commercially available technologies, processes and hardware systems to address the identified D&D risks and challenges. This is accomplished by adapting, modifying (for site-specific requirements), optimizing (for assured safety, better efficiency and lower cost) and demonstrating existing technologies and hardware to produce sufficient technical data and operating parameters to allow the site D&D operators to insert these technologies into their baseline operation with confidence. The initiative stresses the buy-before-make approach in the acquisition of improved technology. Developing enabling novel technologies, when justified by the site needs and deployment schedule, will be considered on a case-by-case basis. This initiative supports development of an informed facility D&D strategy; enhanced verifiability of the efficacy of D&D operations; increased productivity and personnel safety of D&D operation; and facilitation of acceptable facility end-state.	**Characterization** - ***Improve Characterization and Monitoring Technologies for Detection and Quantification of Penetrating Radiation, Radioactive, and Bio-Contaminants*** – Develop: portable real-time Beryllium characterization and monitoring devices for facilities and equipment; regulator-approved field characterization technologies and methods that would facilitate quicker decision-making regarding contaminant removal efforts for concrete; hot cell radionuclide inventory characterization technology; and technology for non-destructive characterization of waste containing high concentrations of Technetium-99 or other radioisotopes that are difficult to characterize by this method.	Deploy improved characterization and monitoring technology into the D&D baseline operations at applicable DOE-EM sites. Facilitate the development of effective facility D&D strategies based on defensible analysis and evaluation of facility conditions and hazards.
	Deactivation - ***Enhance D&D Technologies and Equipment*** – Develop: pool liner integrity monitoring technology (Oak Ridge Research Reactor); technology to treat sodium contaminated process components and equipment; improved containment (Plutonium-238) control methods or fixatives for facility deactivation and/or in-situ closure (F-Area Material Storage Facility at Savannah River); improved concrete scabbling methods; and improved personnel protective technologies.	Deploy advanced technologies and processes allowing for safe deactivation of facilities.
	Decontamination - ***Advance Remote and Robotic Systems to Access and Assess Highly Contaminated and Unsafe Old Facilities*** – Develop: remote sampling equipment for characterization/analysis of tank wall and bottom residue; package or sled mounted treatment units for treatment of inert status chemicals or radioactive components generated during facility deactivation or demolition; systems for the separation of massive equipment laden with radioactive material; and improved personnel protective clothing technologies.	Deploy advanced equipment that effectively accesses, characterizes unsafe facilities, and removes large and complex structures with limited operator involvement.
	Demolition - ***Improve Containment, Disassembling, Size-Reduction and Demolition Technologies*** – Develop: non-intrusive tools to detect and locate energized electrical lines or conduits in soils and in concrete; improved methods for dust suppression during demolition (Savannah River); underwater cutting, removal and packaging techniques (Oak Ridge); and improved methods for demolition of off-gas stack and associated facilities (Oak Ridge).	Deploy enabling demolition technologies and improved methods/processes for better suppression and containment of dust and contaminants during facility demolition.
	Closure - ***Develop Technology for Informed End-State Strategies*** – Develop: canyon disposition (in-situ decommissioning) modeling and in-situ removal and stabilization of contaminants; the Permeable Adsorptive Liner (PAL) technology for onsite disposal of contaminated D&D construction debris, facility waste, small discrete waste sites, and pipelines; technology for surveying large area radiological and hazardous materials and real-time processing of survey data processing for end-state verification (PPPO); and stand-alone powered environmental samplers.	Complete demonstrations of targeted D&D operations to demonstrate effective achievement of required end-state conditions.

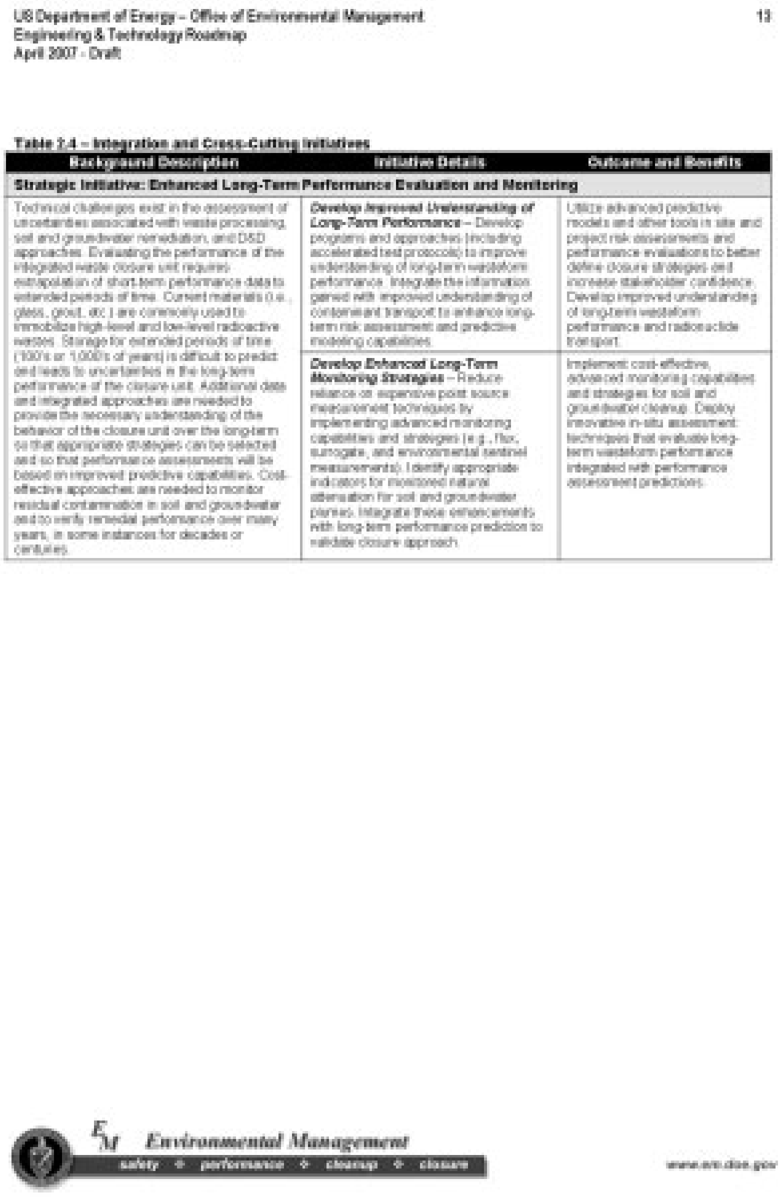
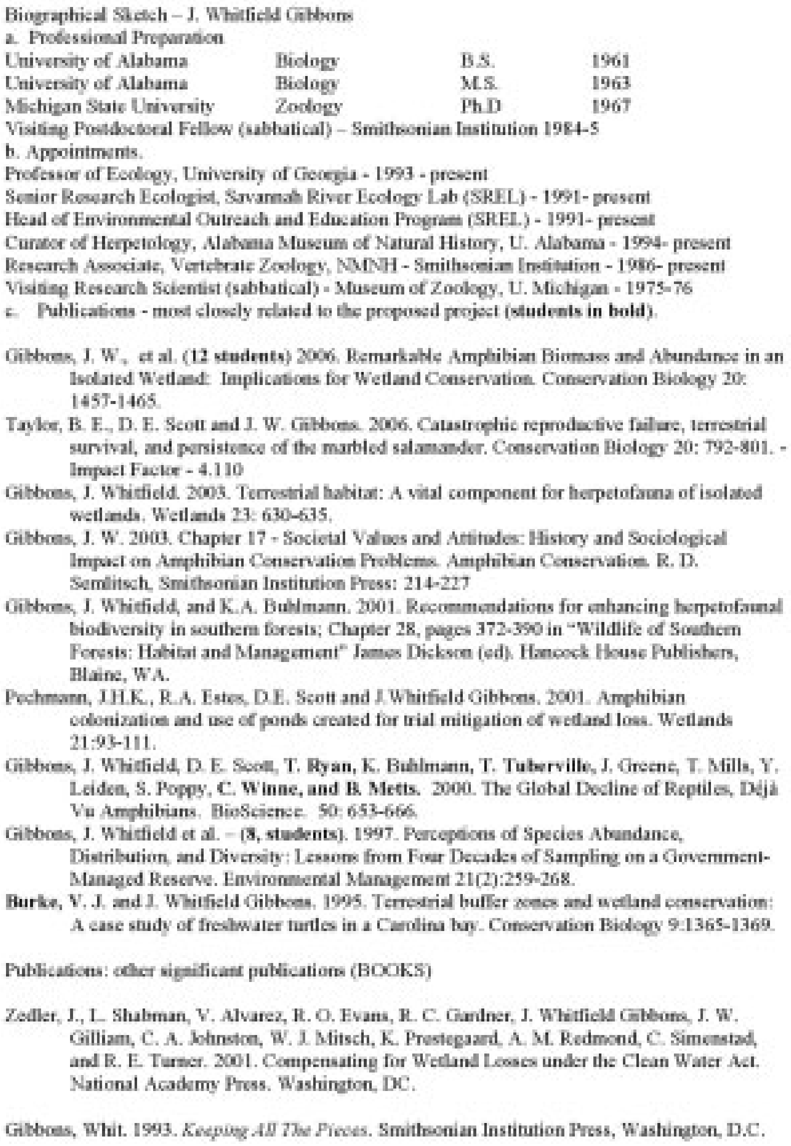


Table 2.4 – Integration and Cross-Cutting Initiatives

Background Description	Initiative Details	Outcome and Benefits
Strategic Initiative: Enhanced Long-Term Performance Evaluation and Monitoring		
Technical challenges exist in the assessment of uncertainties associated with waste processing, soil and groundwater remediation, and D&D approaches. Evaluating the performance of the integrated waste closure unit requires extrapolation of short-term performance data to extended periods of time. Current materials (i.e., glass, grout, etc.) are commonly used to immobilize high-level and low-level radioactive wastes. Storage for extended periods of time (100's or 1,000's of years) is difficult to predict and leads to uncertainties in the long-term performance of the closure unit. Additional data and integrated approaches are needed to provide the necessary understanding of the behavior of the closure unit over the long-term so that appropriate strategies can be selected and so that performance assessments will be based on improved predictive capabilities. Cost-effective approaches are needed to monitor residual contamination in soil and groundwater and to verify remedial performance over many years, in some instances for decades or centuries.	***Develop Improved Understanding of Long-Term Performance*** – Develop programs and approaches (including accelerated test protocols) to improve understanding of long-term wasteform performance. Integrate the information gained with improved understanding of contaminant transport to enhance long-term risk assessment and predictive modeling capabilities.	Utilize advanced predictive models and other tools in site and project risk assessments and performance evaluations to better define closure strategies and increase stakeholder confidence. Develop improved understanding of long-term wasteform performance and radionuclide transport.
	Develop Enhanced Long-Term Monitoring Strategies – Reduce reliance on expensive point source measurement techniques by implementing advanced monitoring capabilities and strategies (e.g., flux, surrogate, and environmental sentinel measurements). Identify appropriate indicators for monitored natural attenuation for soil and groundwater plumes. Integrate these enhancements with long-term performance prediction to validate closure approach.	Implement cost-effective, advanced monitoring capabilities and strategies for soil and groundwater cleanup. Deploy innovative in-situ assessment techniques that evaluate long-term wasteform performance integrated with performance assessment predictions.

SREL Faculty
Two-Page CVs



Biographical Sketch – J. Whitfield Gibbons

a. Professional Preparation

University of Alabama	Biology	B.S.	1961
University of Alabama	Biology	M.S.	1963
Michigan State University	Zoology	Ph.D	1967

Visiting Postdoctoral Fellow (sabbatical) – Smithsonian Institution 1984-5

b. Appointments.

Professor of Ecology, University of Georgia - 1993 - present
Senior Research Ecologist, Savannah River Ecology Lab (SREL) - 1991- present
Head of Environmental Outreach and Education Program (SREL) - 1991- present
Curator of Herpetology, Alabama Museum of Natural History, U. Alabama - 1994- present
Research Associate, Vertebrate Zoology, NMNH - Smithsonian Institution - 1986- present
Visiting Research Scientist (sabbatical) - Museum of Zoology, U. Michigan - 1975-76

c. Publications - most closely related to the proposed project (**students in bold**).

Gibbons, J. W., et al. (**12 students**) 2006. Remarkable Amphibian Biomass and Abundance in an Isolated Wetland: Implications for Wetland Conservation. Conservation Biology 20: 1457-1465.

Taylor, B. E., D. E. Scott and J. W. Gibbons. 2006. Catastrophic reproductive failure, terrestrial survival, and persistence of the marbled salamander. Conservation Biology 20: 792-801. - Impact Factor - 4.110

Gibbons, J. Whitfield. 2003. Terrestrial habitat: A vital component for herpetofauna of isolated wetlands. Wetlands 23: 630-635.

Gibbons, J. W. 2003. Chapter 17 - Societal Values and Attitudes: History and Sociological Impact on Amphibian Conservation Problems. Amphibian Conservation. R. D. Semlitsch, Smithsonian Institution Press: 214-227

Gibbons, J. Whitfield, and K.A. Buhlmann. 2001. Recommendations for enhancing herpetofaunal biodiversity in southern forests; Chapter 28, pages 372-390 in "Wildlife of Southern Forests: Habitat and Management" James Dickson (ed). Hancock House Publishers, Blaine, WA.

Pechmann, J.H.K., R.A. Estes, D.E. Scott and J.Whitfield Gibbons. 2001. Amphibian colonization and use of ponds created for trial mitigation of wetland loss. Wetlands 21:93-111.

Gibbons, J. Whitfield, D. E. Scott, **T. Ryan**, K. **Buhlmann**, **T. Tuberville**, J. Greene, T. Mills, Y. Leiden, S. Poppy, **C. Winne, and B. Metts.** 2000. The Global Decline of Reptiles, Déjà Vu Amphibians. BioScience. 50: 653-666.

Gibbons, J. Whitfield et al. – (**8, students**). 1997. Perceptions of Species Abundance, Distribution, and Diversity: Lessons from Four Decades of Sampling on a Government-Managed Reserve. Environmental Management 21(2):259-268.

Burke, V. J. and J. Whitfield Gibbons. 1995. Terrestrial buffer zones and wetland conservation: A case study of freshwater turtles in a Carolina bay. Conservation Biology 9:1365-1369.

Publications: other significant publications (BOOKS)

Zedler, J., L. Shabman, V. Alvarez, R. O. Evans, R. C. Gardner, J. Whitfield Gibbons, J. W. Gilliam, C. A. Johnston, W. J. Mitsch, K. Prestegaard, A. M. Redmond, C. Simenstad, and R. E. Turner. 2001. Compensating for Wetland Losses under the Clean Water Act. National Academy Press. Washington, DC.

Gibbons, Whit. 1993. *Keeping All The Pieces*. Smithsonian Institution Press, Washington, D.C.

Gibbons, J. Whitfield, and R. D. Semlitsch. 1991. *Guide to the Reptiles and Amphibians of the Savannah River Site.* University of Georgia Press, Athens.

d. Synergistic Activities.
Chairman of Governor's Advisory Board, Heritage Trust Program, South Carolina Department of Natural Resources (1993-1996), which involved designation of cultural and natural heritage sites for purchase and protection by the state. Familiarity with natural systems in the region resulted in the preservation of numerous sites and several thousands acres throughout the state.

Because of background and experience in herpetology was selected as the lead organizer in the formation of Partners in Amphibian and Reptile Conservation (PARC) in 1999 in response to declining amphibian and reptile issue.

Summarized and synthesized existing data and literature on the ecological status of the flatwoods salamander (*Ambystoma cingulatum*) upon request of the National Council for Air and Stream Improvement prior to the species being listed under the Endangered Species Act.

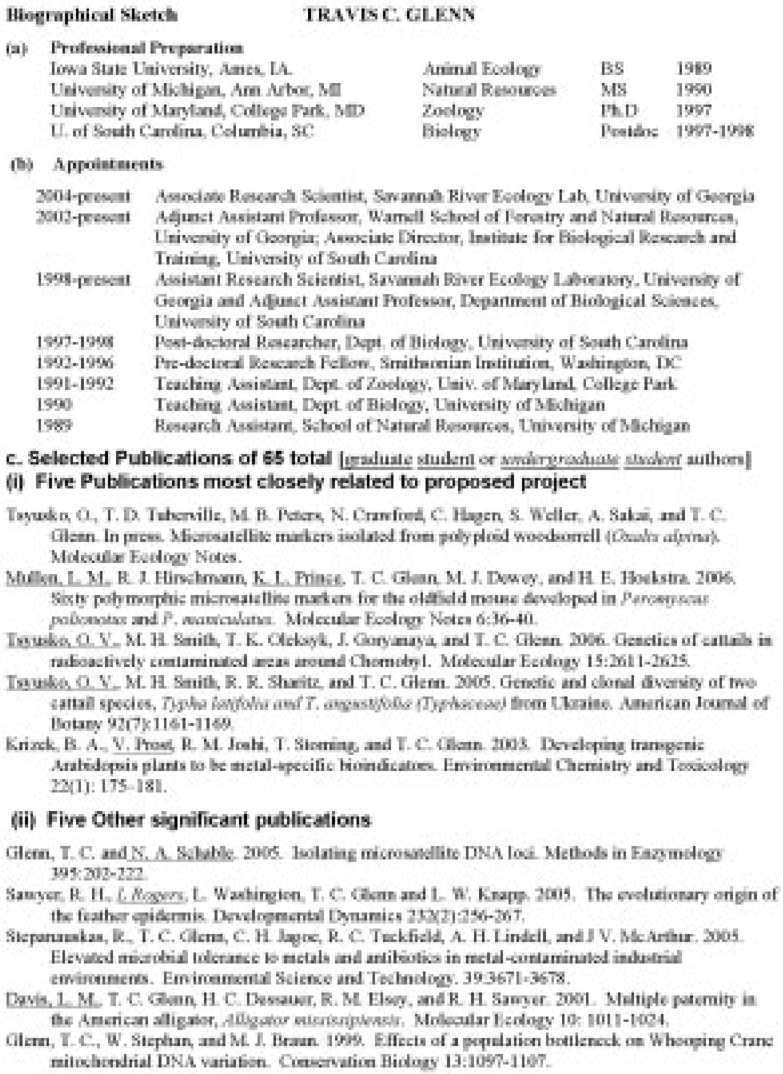
Selected for membership in the Outdoor Writers Association of America, a relationship that has provided opportunities to contribute further to public understanding by non-scientists on a national scale of ecological concepts and environmental issues.

e. Collaborators & Other Affiliations. Collaborators (within last 48 months) - Barrett, Gary-University of Georgia ; Bodie, J.R.-private consultant; Buhlmann, K.A.- Conservation International; Vincent – Science Editor, Johns Hopkins University Press; Clark, Erin – U.S. Fish and Wildlife Service; Collins, D.E. – Tennessee Aquarium; Congdon, J.D. - SREL; Distler,K.-Turner Foundation; Dorcas, M.E. - Davidson College; Greene, J. - SREL; Hoyle, M.E-SC Dept Natural Resources; Hutchison, Victor – University of Oklahoma; Jensen, J.B-GA Dept Natural Resources; Kandl, K.- U. of Iowa; Joe Pechmann - University of New Orleans; Leiden, Y.A. - Quail Unlimited; Lovich, J. – U.S. Geological Survey; Lydeard, Charles – NSF; Metts, B. – SREL; Meylan, Peter – Eckerd College; Mills, T. - SREL; Ryan, T. – University of Missouri; Scott, D.E- SREL.; Semlitsch, R.D. – University of Missouri; Stangel, PW-Natl Fish and Wildlife Foundation; Tuberville, T.D. - SREL; Winne, C. – Sam Houston University; Zedler, Joy -- U. Wisconsin; Shabman, Leonard -- VPI; Alvarez, Victoria -- Calif. Dept of Transportation; Evans, Robert -- NC State; Gardner, Roy -- Stetson U.; Gilliam, Wendell -- N.C. State; Johnston, Carol -- U. Minn.; Mitsch, Bill -- Ohio State; Prestegaard, Karen -- U. Maryland ; Redmond, Ann -- WilsonMiller, Inc.; Simenstad, Charles -- U. Washington; Turner, Gene -- LSU; Carlos Camp, Piedmont College; Mac Hunter, U. of Maine; James Gibbs, SUNY, Syracuse

Graduate and Post Doctoral Advisors.
Ralph Chermock - deceased; Donald W. Tinkle – deceased; Max Hensley – deceased

Thesis Advisor; Postgraduate-Scholar Sponsor. Total supervised - 46 (20 MS; 9 Ph.D.; 21 Post-docts). Last five years (University of Georgia): Luke Fedewa (M.S.) State Coordinator, PARC; Lucas Wilkinson (M.S.) USGS; Xavier Glaudas (M.S.) UNLV; Meg Hoyle (M.S.) SC Dept Natural Resources; John R. Lee (M.S.) University of Idaho; Tracey Tuberville (M.S.) Virginia Natural Heritage Program; Phil Spivey (M.S.) GA Dept Natural Resources; Gabrielle Graeter, NC DNR; Ria Tsaliagos; Erin Clark - USFWS.

Post-graduate scholars (total = 19; the following within last five years: Melissa Pilgrim - U. of Arkansas; Betsie Rothermel, U. Missouri; Tom Akre - George Mason U.; Kurt Buhlmann – Conservation International; Michael Dorcas – Davidson College; Robert Reed - USGS.



Biographical Sketch **TRAVIS C. GLENN**

(a) Professional Preparation

Iowa State University, Ames, IA.	Animal Ecology	BS	1989
University of Michigan, Ann Arbor, MI	Natural Resources	MS	1990
University of Maryland, College Park, MD	Zoology	Ph.D	1997
U. of South Carolina, Columbia, SC	Biology	Postdoc	1997-1998

(b) Appointments

2004-present	Associate Research Scientist, Savannah River Ecology Lab, University of Georgia
2002-present	Adjunct Assistant Professor, Warnell School of Forestry and Natural Resources, University of Georgia; Associate Director, Institute for Biological Research and Training, University of South Carolina
1998-present	Assistant Research Scientist, Savannah River Ecology Laboratory, University of Georgia and Adjunct Assistant Professor, Department of Biological Sciences, University of South Carolina
1997-1998	Post-doctoral Researcher, Dept. of Biology, University of South Carolina
1992-1996	Pre-doctoral Research Fellow, Smithsonian Institution, Washington, DC
1991-1992	Teaching Assistant, Dept. of Zoology, Univ. of Maryland, College Park
1990	Teaching Assistant, Dept. of Biology, University of Michigan
1989	Research Assistant, School of Natural Resources, University of Michigan

c. Selected Publications of 65 total [graduate student or *undergraduate student* authors]

(i) Five Publications most closely related to proposed project

Tsyusko, O., T. D. Tuberville, M. B. Peters, N. Crawford, C. Hagen, S. Weller, A. Sakai, and T. C. Glenn. In press. Microsatellite markers isolated from polyploid woodsorrell (*Oxalis alpina*). Molecular Ecology Notes.

Mullen, L. M., R. J. Hirschmann, K. L. Prince, T. C. Glenn, M. J. Dewey, and H. E. Hoekstra. 2006. Sixty polymorphic microsatellite markers for the oldfield mouse developed in *Peromyscus polionotus* and *P. maniculatus*. Molecular Ecology Notes 6:36-40.

Tsyusko, O. V., M. H. Smith, T. K. Oleksyk, J. Goryanaya, and T. C. Glenn. 2006. Genetics of cattails in radioactively contaminated areas around Chornobyl. Molecular Ecology 15:2611-2625.

Tsyusko, O. V., M. H. Smith, R. R. Sharitz, and T. C. Glenn. 2005. Genetic and clonal diversity of two cattail species, *Typha latifolia and T. angustifolia (Typhaceae)* from Ukraine. American Journal of Botany 92(7):1161-1169.

Krizek, B. A., V. Prost, R. M. Joshi, T. Stoming, and T. C. Glenn. 2003. Developing transgenic Arabidopsis plants to be metal-specific bioindicators. Environmental Chemistry and Toxicology 22(1): 175-181.

(ii) Five Other significant publications

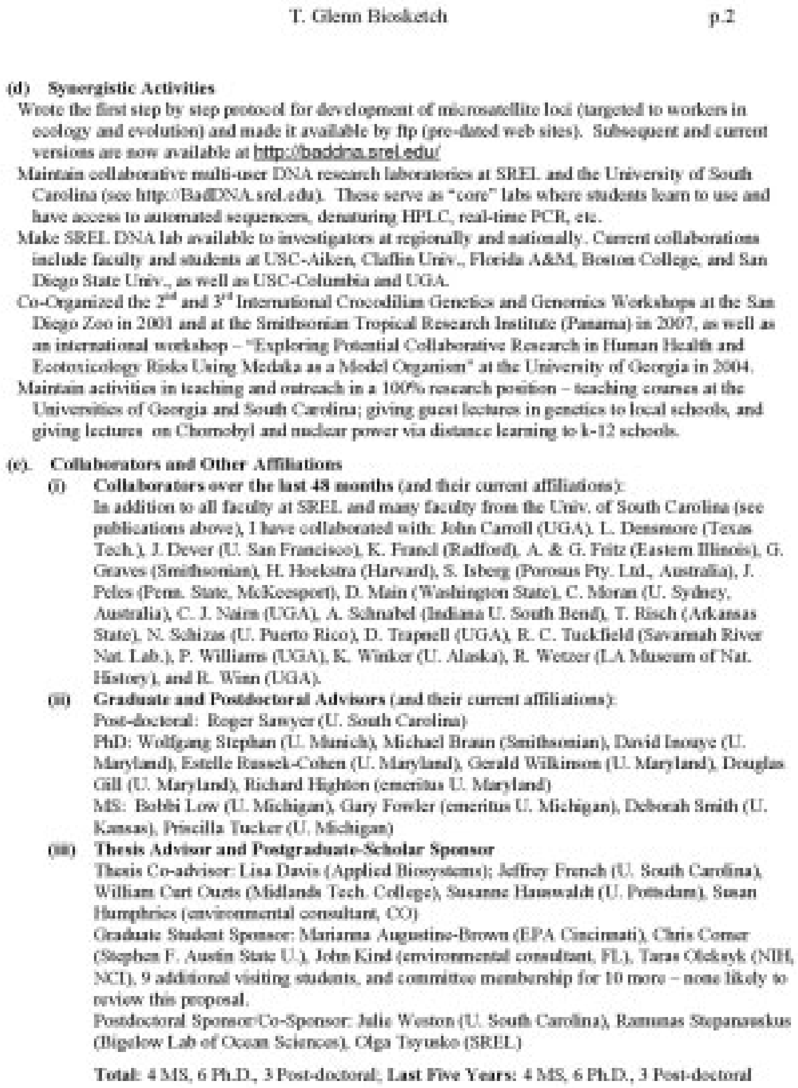
Glenn, T. C. and N. A. Schable. 2005. Isolating microsatellite DNA loci. Methods in Enzymology 395:202-222.

Sawyer, R. H., *L Rogers*, L. Washington, T. C. Glenn and L. W. Knapp. 2005. The evolutionary origin of the feather epidermis. Developmental Dynamics 232(2):256-267.

Stepanauskas, R., T. C. Glenn, C. H. Jagoe, R. C. Tuckfield, A. H. Lindell, and J V. McArthur. 2005. Elevated microbial tolerance to metals and antibiotics in metal-contaminated industrial environments. Environmental Science and Technology. 39:3671-3678.

Davis, L. M., T. C. Glenn, H. C. Dessauer, R. M. Elsey, and R. H. Sawyer. 2001. Multiple paternity in the American alligator, *Alligator mississipiensis*. Molecular Ecology 10: 1011-1024.

Glenn, T. C., W. Stephan, and M. J. Braun. 1999. Effects of a population bottleneck on Whooping Crane mitochondrial DNA variation. Conservation Biology 13:1097-1107.



(d) Synergistic Activities

Wrote the first step by step protocol for development of microsatellite loci (targeted to workers in ecology and evolution) and made it available by ftp (pre-dated web sites). Subsequent and current versions are now available at http://baddna.srel.edu/

Maintain collaborative multi-user DNA research laboratories at SREL and the University of South Carolina (see http://BadDNA.srel.edu). These serve as "core" labs where students learn to use and have access to automated sequencers, denaturing HPLC, real-time PCR, etc.

Make SREL DNA lab available to investigators at regionally and nationally. Current collaborations include faculty and students at USC-Aiken, Claflin Univ., Florida A&M, Boston College, and San Diego State Univ., as well as USC-Columbia and UGA.

Co-Organized the 2nd and 3rd International Crocodilian Genetics and Genomics Workshops at the San Diego Zoo in 2001 and at the Smithsonian Tropical Research Institute (Panama) in 2007, as well as an international workshop – "Exploring Potential Collaborative Research in Human Health and Ecotoxicology Risks Using Medaka as a Model Organism" at the University of Georgia in 2004.

Maintain activities in teaching and outreach in a 100% research position – teaching courses at the Universities of Georgia and South Carolina; giving guest lectures in genetics to local schools, and giving lectures on Chernobyl and nuclear power via distance learning to k-12 schools.

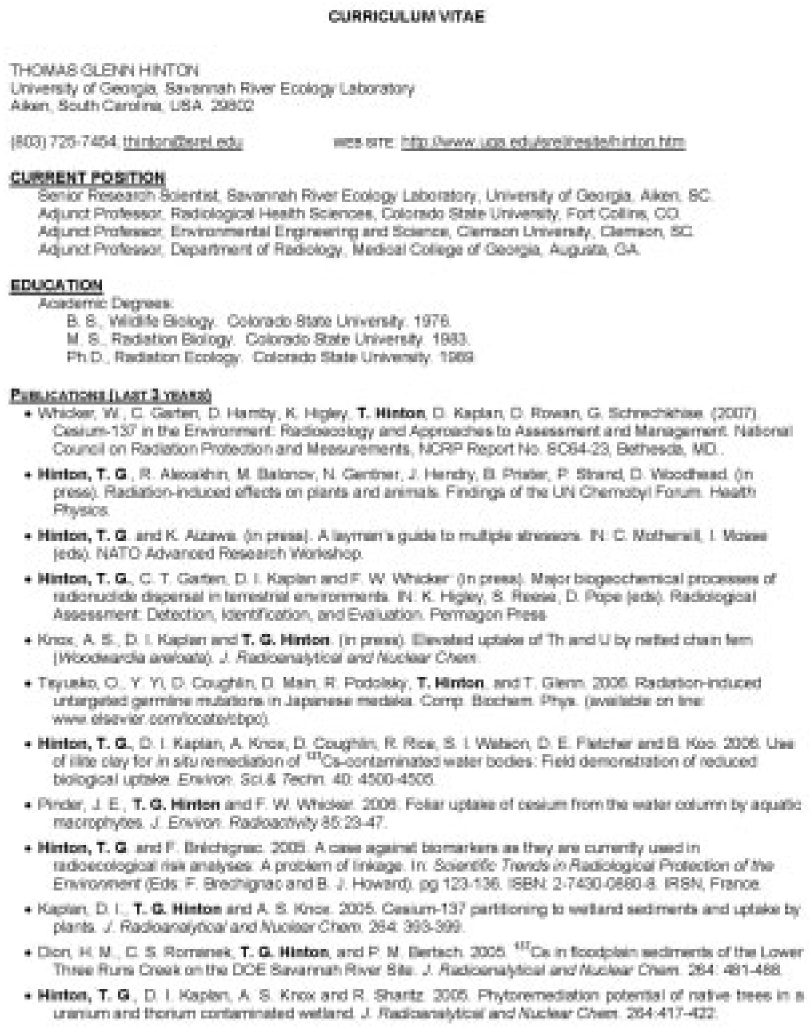
(e). Collaborators and Other Affiliations

(i) **Collaborators over the last 48 months** (and their current affiliations):
In addition to all faculty at SREL and many faculty from the Univ. of South Carolina (see publications above), I have collaborated with: John Carroll (UGA). L. Densmore (Texas Tech.), J. Dever (U. San Francisco), K. Francl (Radford), A. & G. Fritz (Eastern Illinois), G. Graves (Smithsonian), H. Hoekstra (Harvard), S. Isberg (Porosus Pty. Ltd., Australia), J. Peles (Penn. State, McKeesport), D. Main (Washington State), C. Moran (U. Sydney, Australia), C. J. Nairn (UGA), A. Schnabel (Indiana U. South Bend), T. Risch (Arkansas State), N. Schizas (U. Puerto Rico), D. Trapnell (UGA), R. C. Tuckfield (Savannah River Nat. Lab.), P. Williams (UGA), K. Winker (U. Alaska), R. Wetzer (LA Museum of Nat. History), and R. Winn (UGA).

(ii) **Graduate and Postdoctoral Advisors** (and their current affiliations):
Post-doctoral: Roger Sawyer (U. South Carolina)
PhD: Wolfgang Stephan (U. Munich), Michael Braun (Smithsonian), David Inouye (U. Maryland), Estelle Russek-Cohen (U. Maryland), Gerald Wilkinson (U. Maryland), Douglas Gill (U. Maryland), Richard Highton (emeritus U. Maryland)
MS: Bobbi Low (U. Michigan), Gary Fowler (emeritus U. Michigan), Deborah Smith (U. Kansas), Priscilla Tucker (U. Michigan)

(iii) **Thesis Advisor and Postgraduate-Scholar Sponsor**
Thesis Co-advisor: Lisa Davis (Applied Biosystems); Jeffrey French (U. South Carolina), William Curt Ouzts (Midlands Tech. College), Susanne Hauswaldt (U. Potsdam), Susan Humphries (environmental consultant, CO)
Graduate Student Sponsor: Marianna Augustine-Brown (EPA Cincinnati), Chris Comer (Stephen F. Austin State U.), John Kind (environmental consultant, FL), Taras Oleksyk (NIH, NCI), 9 additional visiting students, and committee membership for 10 more – none likely to review this proposal.
Postdoctoral Sponsor/Co-Sponsor: Julie Weston (U. South Carolina), Ramunas Stepanauskas (Bigelow Lab of Ocean Sciences), Olga Tsyusko (SREL)

Total: 4 MS, 6 Ph.D., 3 Post-doctoral; **Last Five Years:** 4 MS, 6 Ph.D., 3 Post-doctoral



CURRICULUM VITAE

THOMAS GLENN HINTON
University of Georgia, Savannah River Ecology Laboratory
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CURRENT POSITION

Senior Research Scientist, Savannah River Ecology Laboratory, University of Georgia, Aiken, SC.
Adjunct Professor, Radiological Health Sciences, Colorado State University, Fort Collins, CO.
Adjunct Professor, Environmental Engineering and Science, Clemson University, Clemson, SC.
Adjunct Professor, Department of Radiology, Medical College of Georgia, Augusta, GA.

EDUCATION

Academic Degrees:
B. S., Wildlife Biology. Colorado State University. 1976.
M. S., Radiation Biology. Colorado State University. 1983.
Ph.D., Radiation Ecology. Colorado State University. 1989.

PUBLICATIONS (LAST 3 YEARS)

- Whicker, W., C. Garten, D. Hamby, K. Higley, **T. Hinton**, D. Kaplan, D. Rowan, G. Schrechkhise. (2007). Cesium-137 in the Environment: Radioecology and Approaches to Assessment and Management. National Council on Radiation Protection and Measurements, NCRP Report No. SC64-23, Bethesda, MD..
- **Hinton, T. G**., R. Alexakhin, M. Balonov, N. Gentner, J. Hendry, B. Prister, P. Strand, D. Woodhead. (in press). Radiation-induced effects on plants and animals: Findings of the UN Chernobyl Forum. Health Physics.
- **Hinton, T. G**. and K. Aizawa. (in press). A layman's guide to multiple stressors. IN: C. Mothersill, I. Mosse (eds). NATO Advanced Research Workshop.
- **Hinton, T. G.**, C. T. Garten, D. I. Kaplan and F. W. Whicker. (in press). Major biogeochemical processes of radionuclide dispersal in terrestrial environments. IN: K. Higley, S. Reese, D. Pope (eds). Radiological Assessment: Detection, Identification, and Evaluation. Permagon Press.
- Knox, A. S., D. I. Kaplan and **T. G. Hinton**. (in press). Elevated uptake of Th and U by netted chain fern (*Woodwardia areolata*). *J. Radioanalytical and Nuclear Chem.*
- Tsyusko, O., Y. Yi, D. Coughlin, D. Main, R. Podolsky, **T. Hinton**, and T. Glenn. 2006. Radiation-induced untargeted germline mutations in Japanese medaka. Comp. Biochem. Phys. (available on line: www.elsevier.com/locate/cbpc).
- **Hinton, T. G.**, D. I. Kaplan, A. Knox, D. Coughlin, R. Rice, S. I. Watson, D. E. Fletcher and B. Koo. 2006. Use of illite clay for *in situ* remediation of ^{137}Cs-contaminated water bodies: Field demonstration of reduced biological uptake. *Environ. Sci.& Techn.* 40: 4500-4505.
- Pinder, J. E., **T. G. Hinton** and F. W. Whicker. 2006. Foliar uptake of cesium from the water column by aquatic macrophytes. *J. Environ. Radioactivity* 85:23-47.
- **Hinton, T. G**. and F. Bréchignac. 2005. A case against biomarkers as they are currently used in radioecological risk analyses: A problem of linkage. In: *Scientific Trends in Radiological Protection of the Environment* (Eds. F. Brechignac and B. J. Howard). pg 123-136. ISBN: 2-7430-0680-8. IRSN, France.
- Kaplan, D. I., **T. G. Hinton** and A. S. Knox. 2005. Cesium-137 partitioning to wetland sediments and uptake by plants. *J. Radioanalytical and Nuclear Chem.* 264: 393-399.
- Dion, H. M., C. S. Romanek, **T. G. Hinton**, and P. M. Bertsch. 2005. ^{137}Cs in floodplain sediments of the Lower Three Runs Creek on the DOE Savannah River Site. *J. Radioanalytical and Nuclear Chem.* 264: 481-488.
- **Hinton, T. G**., D. I. Kaplan, A. S. Knox and R. Sharitz. 2005. Phytoremediation potential of native trees in a uranium and thorium contaminated wetland. *J. Radioanalytical and Nuclear Chem.* 264:417-422.

- Pinder III, J. E., **T. G. Hinton** and F. W. Whicker 2005. The influence of a whole-lake addition of stable cesium on the remobilization of aged ^{137}Cs in a contaminated reservoir. *J. Environ. Radioactivity* 80:225-243.
- **Hinton, T. G.,** J. S. Bedford, J. C. Congdon and F. W. Whicker. 2004. Effects of radiation on the environment: A need to question old paradigms and enhance collaboration among radiation biologists and radiation ecologists. *Radiation Research* 162:332-338.
- Wilson, M. D., W. McCormick and **T. G. Hinton**. 2004. The maximally exposed individual–Comparison of maximum likelihood estimation of high quantiles to the extreme value estimate. *Risk Analysis* 24:1143-1150.
- **Hinton, T. G.**, D. P. Coughlin, Y. Yi and L. C. Marsh. 2004. Low dose rate irradiation facility: Initial study on chronic exposures to medaka. *J. Environ. Radioactivity* 74:43-55.
- Whicker, F. W., **T. G. Hinton**, M. M. MacDonnell, J. E. Pinder III, and L. J. Habegger. 2004. Avoiding destructive remediation at DOE sites. Science 303:1615-1616.
- Whicker, F. W., **T. G. Hinton**, M. M. MacDonnell, J. E. Pinder III, and L. J. Habegger. 2004. Response to L. Moore's and Response to R. Efroymson's comments on "Avoiding destructive remediation at DOE sites". Science 306:975-977.
- Wilson, M. D. and **T. G. Hinton**. 2003. Comparative bias associated with various estimates of dose to the maximally exposed individual. *Health Physics* 85:585-593.
- Sauras-Yera, T., J. Tent, Y. Ivanov, **T. G. Hinton**, G. Rauret and R. Vallejo,. 2003. Reduction of crop contamination by resuspension within the 30-km zone of Chernobyl Nuclear Power Plant. *Environ. Sci. Technol.* 37:4592-4596.
- Wilson, M. D. and **T. G. Hinton.** 2003. Statistics of extreme values – comparative bias associated with various estimates of dose to the maximally exposed individual. *IN: Proceedings of the Third International Symposium on the Protection of the Environment from Ionising Radiation.* Darwin, Australia, 22 -26 July 2002 International Atomic Energy Agency. IAEA-CSP-17. Vienna, Austria.
- Ulsh, B. A., **T. G. Hinton**, J. D. Congdon, L. C. Dugan, F. W. Whicker and J. S. Bedford. 2003. Environmental biodosimetry: A biological relevant tool for ecological risk assessment and biomonitoring. *J. Environ. Radioactivity.* 66:121-139.
- Knox, A., D. Kaplan, D. Adriano, **T. G. Hinton**, and M. D. Wilson. 2003. Apatite and Phillipsite as sequestering agents for metals and radionuclides. *J. Environ.* Quality 32:515-525.

AWARDS and PROFESSIONAL SERVICE

- National Academy of Sciences, Young Investigators Award for 1993 - 1994 (Nuclear Accidents and Radioactive Contamination, collaboration with Ukraine and Belarus).
- National Environmental Excellence Award for Environmental Management in recognition of work conducted on the U.S. Department of Energy's Biota Dose Assessment Committee (July 2001).
- Member of National Council on Radiation Protection and Measurement's committee on Cesium in the EnSvironment (1996-current).
- Member of Centers for Disease Control and Prevention committee on Savannah River Health Effects (1995 to 2002).
- Biota Dose Assessment Committee, a DOE committee tasked with developing guidelines for ecological risk calculations (2002- 2004).
- Member of International Atomic Energy Agency forum tasked with summarizing the environmental effects of the Chernobyl accident (2003-2005).
- One of eight members on an international board tasked with reviewing the Laboratory of Radioecology and Ecotoxicology at Cadarache, and the Laboratory of Human Radiation Protection and Toxicology at Pierrelatte (2003 and 2005).
- End User Group Member to European Union funded ERICA project (*Environmental Risks from Ionising Contaminants: Assessment and Management*) 2004 to present.

J VAUN MCARTHUR

(i). Professional Preparation

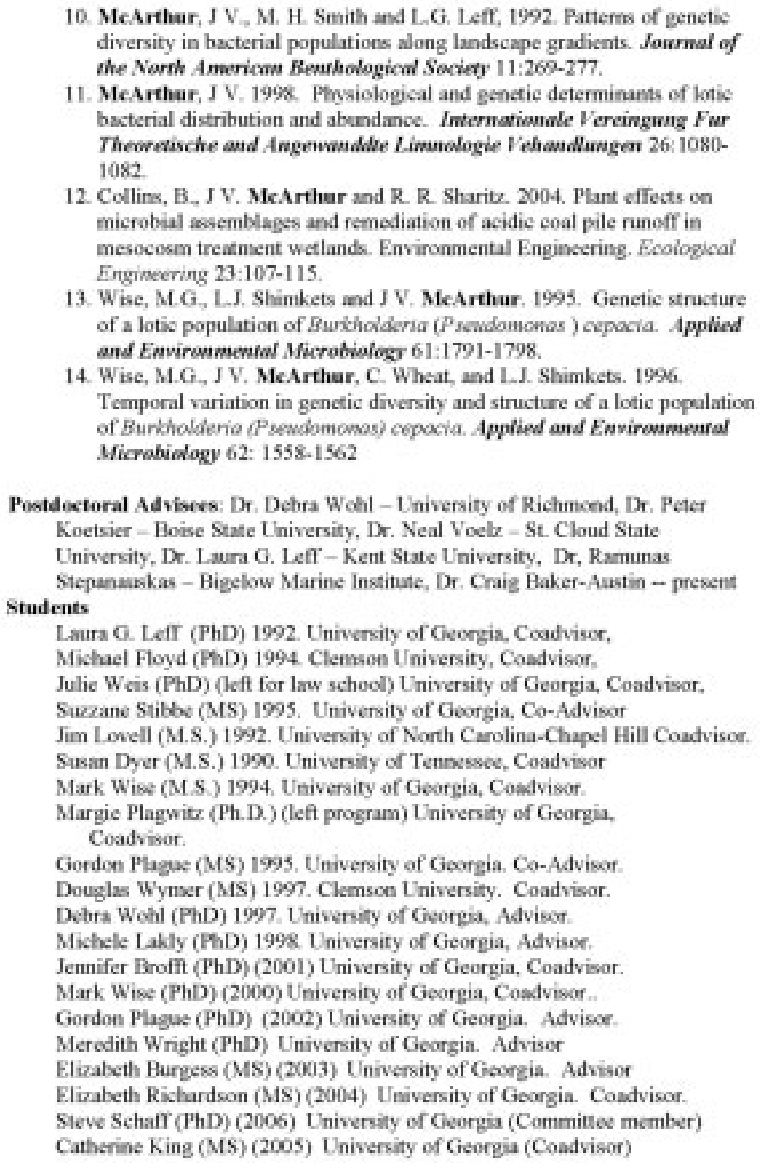
Ricks College, Rexburg, ID		AA	1973
Brigham Young University, Provo, UT	Zoology	BS	1977
Brigham Young University, Provo, UT	Zoology	MS	1980
Kansas State University, Manhattan, KS	Biology/ecology	Ph.D	1984
Savannah River Ecology Laboratory		Postdoc	

(ii). Appointments

1986-1992	Assistant Research Scientist, Savannah River Ecology Laboratory
1992-1998	Associate Research Scientist, Savannah River Ecology Laboratory
1999-present	Senior Scientist, Savannah River Ecology Laboratory

(iii). Selected Publications

1. Thompson, S.A, E. V. Maani, A. Lindell, A., Catherine King, C., and J V. **McArthur**. 2007. A novel tetracycline resistance determinant isolated from an environmental strain of *Serratia morcescens*. In press Applied and Environmental Microbiology 73:2199-2206.
2. Baker-Austin, C., M. S. Wright, R. Stepanauskas, and J V. **McArthur**. 2006. Co-selction for antibiotic and metal resistance. Trends Microbiology 14:176-182.
3. Stepanauskas, R., T. C. Glenn, C. H. Jagoe, R. C. Tuckfield, A. Lindell, and J V. **McArthur**. 2005. Elevated microbial tolerance to metals and antibiotics in metal-contaminated industrial environments. Enviromental Science and Technology 39:3671-3678.
4. Wright, M. S., G.L. Peltier, R. Stepanauskas, and J V. **McArthur**. 2006. Bacterial tolerances to metals and antibiotic in metal-contaminated and reference streams. FEMS Microbiology Ecology 58:293-302.
5. Stepanauskas, R., T. C. Glenn, C. H. Jagoe, R. C. Tuckfield, A. H. Lindell, C. J. King, and J V. **McArthur**. 2006. Coselection for microbial resistance to metals and antibiotic in freshwater microcowsms. Environmental Microbiology 8:1510-1514.
6. **McArthur**, J V. and R. C. Tuckfield. 2000. Spatial patterns in antibiotic resistance among stream bacteria: effects of industrial pollution. Appl. Environ. Microbiol. 66:3722-3726.
7. **McArthur**, J V. 2003 "Bacteria as Biomonitors." pages 249-262. *In* Rader, R.B., D. P. Batzer, and S. A. Wissinger (eds). Bioassesment and Management of North American Wetlands. John Wiley & Sons, Inc. New York.
8. **McArthur**, J V. and R. C. Tuckfield. 1997. Information length: spatial and temporal parameters among stream bacterial assemblages. **Journal of the North American Benthological Society** 16:347-357.
9. **McArthur**, J V., D. A. Kovacic and M. H. Smith. 1988. Genetic diversity in natural populations of a soil bacterium across a landscape gradient. ***Proceedings of the National Academy of Science*** 85:9621 -9624.

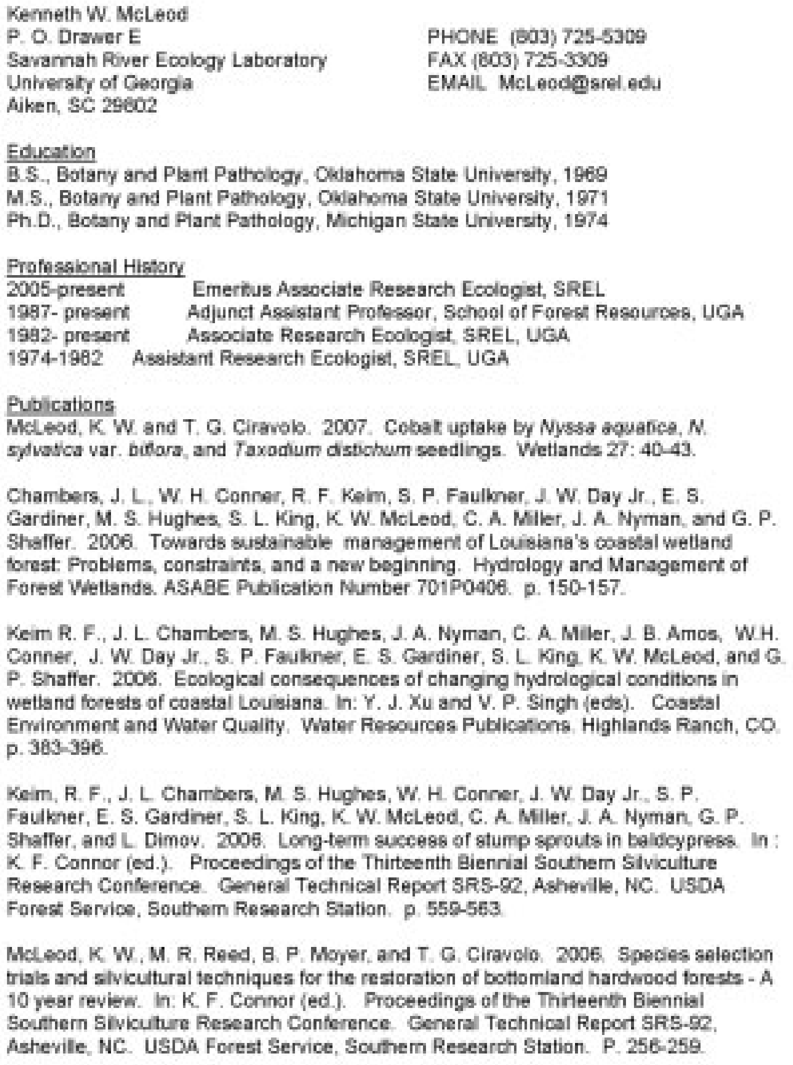


10. **McArthur**, J V., M. H. Smith and L.G. Leff, 1992. Patterns of genetic diversity in bacterial populations along landscape gradients. ***Journal of the North American Benthological Society*** 11:269-277.
11. **McArthur**, J V. 1998. Physiological and genetic determinants of lotic bacterial distribution and abundance. ***Internationale Vereingung Fur Theoretische and Angewanddte Limnologie Vehandlungen*** 26:1080-1082.
12. Collins, B., J V. **McArthur** and R. R. Sharitz. 2004. Plant effects on microbial assemblages and remediation of acidic coal pile runoff in mesocosm treatment wetlands. Environmental Engineering. *Ecological Engineering* 23:107-115.
13. Wise, M.G., L.J. Shimkets and J V. **McArthur**. 1995. Genetic structure of a lotic population of *Burkholderia* (*Pseudomonas*) *cepacia*. ***Applied and Environmental Microbiology*** 61:1791-1798.
14. Wise, M.G., J V. **McArthur**, C. Wheat, and L.J. Shimkets. 1996. Temporal variation in genetic diversity and structure of a lotic population of *Burkholderia (Pseudomonas) cepacia*. ***Applied and Environmental Microbiology*** 62: 1558-1562

Postdoctoral Advisees: Dr. Debra Wohl – University of Richmond, Dr. Peter Koetsier – Boise State University, Dr. Neal Voelz – St. Cloud State University, Dr. Laura G. Leff – Kent State University, Dr, Ramunas Stepanauskas – Bigelow Marine Institute, Dr. Craig Baker-Austin -- present

Students

Laura G. Leff (PhD) 1992. University of Georgia, Coadvisor,
Michael Floyd (PhD) 1994. Clemson University, Coadvisor,
Julie Weis (PhD) (left for law school) University of Georgia, Coadvisor,
Suzzane Stibbe (MS) 1995. University of Georgia, Co-Advisor
Jim Lovell (M.S.) 1992. University of North Carolina-Chapel Hill Coadvisor.
Susan Dyer (M.S.) 1990. University of Tennessee, Coadvisor
Mark Wise (M.S.) 1994. University of Georgia, Coadvisor.
Margie Plagwitz (Ph.D.) (left program) University of Georgia, Coadvisor.
Gordon Plague (MS) 1995. University of Georgia. Co-Advisor.
Douglas Wymer (MS) 1997. Clemson University. Coadvisor.
Debra Wohl (PhD) 1997. University of Georgia, Advisor.
Michele Lakly (PhD) 1998. University of Georgia, Advisor.
Jennifer Brofft (PhD) (2001) University of Georgia, Coadvisor.
Mark Wise (PhD) (2000) University of Georgia, Coadvisor..
Gordon Plague (PhD) (2002) University of Georgia. Advisor.
Meredith Wright (PhD) University of Georgia. Advisor
Elizabeth Burgess (MS) (2003) University of Georgia. Advisor
Elizabeth Richardson (MS) (2004) University of Georgia. Coadvisor.
Steve Schaff (PhD) (2006) University of Georgia (Committee member)
Catherine King (MS) (2005) University of Georgia (Coadvisor)



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Education

B.S., Botany and Plant Pathology, Oklahoma State University, 1969
M.S., Botany and Plant Pathology, Oklahoma State University, 1971
Ph.D., Botany and Plant Pathology, Michigan State University, 1974

Professional History

2005-present	Emeritus Associate Research Ecologist, SREL
1987- present	Adjunct Assistant Professor, School of Forest Resources, UGA
1982- present	Associate Research Ecologist, SREL, UGA
1974-1982	Assistant Research Ecologist, SREL, UGA

Publications

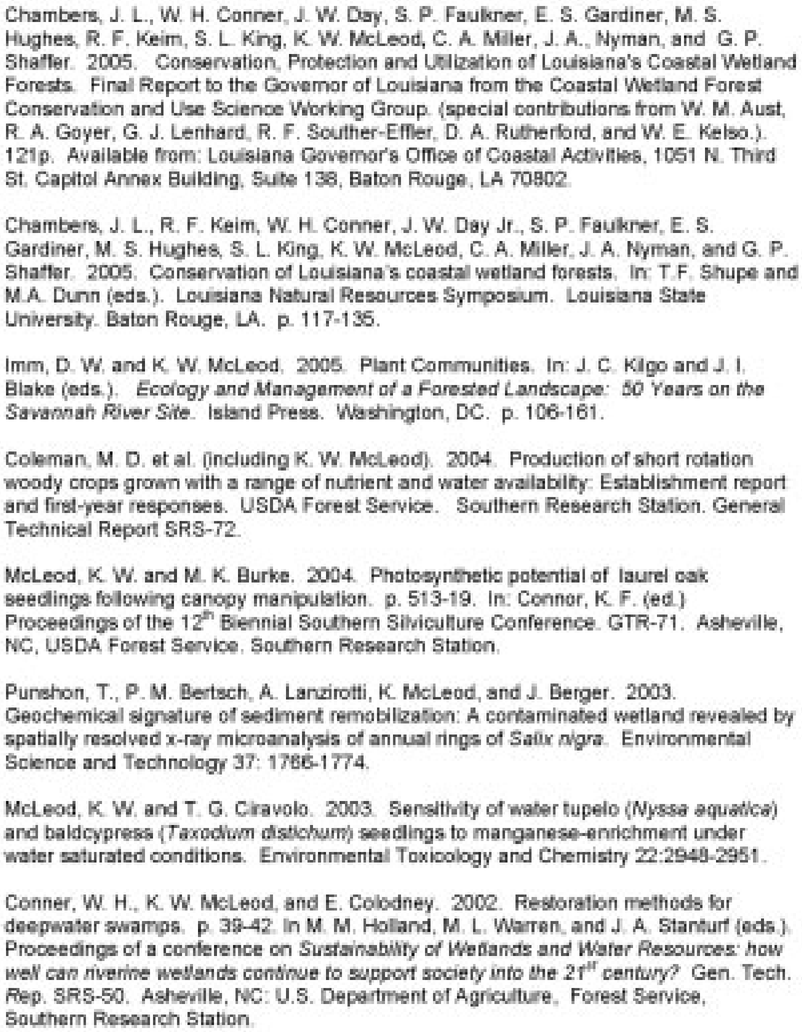
McLeod, K. W. and T. G. Ciravolo. 2007. Cobalt uptake by *Nyssa aquatica*, *N. sylvatica* var. *biflora*, and *Taxodium distichum* seedlings. Wetlands 27: 40-43.

Chambers, J. L., W. H. Conner, R. F. Keim, S. P. Faulkner, J. W. Day Jr., E. S. Gardiner, M. S. Hughes, S. L. King, K. W. McLeod, C. A. Miller, J. A. Nyman, and G. P. Shaffer. 2006. Towards sustainable management of Louisiana's coastal wetland forest: Problems, constraints, and a new beginning. Hydrology and Management of Forest Wetlands. ASABE Publication Number 701P0406. p. 150-157.

Keim R. F., J. L. Chambers, M. S. Hughes, J. A. Nyman, C. A. Miller, J. B. Amos, W.H. Conner, J. W. Day Jr., S. P. Faulkner, E. S. Gardiner, S. L. King, K. W. McLeod, and G. P. Shaffer. 2006. Ecological consequences of changing hydrological conditions in wetland forests of coastal Louisiana. In: Y. J. Xu and V. P. Singh (eds). Coastal Environment and Water Quality. Water Resources Publications. Highlands Ranch, CO. p. 383-396.

Keim, R. F., J. L. Chambers, M. S. Hughes, W. H. Conner, J. W. Day Jr., S. P. Faulkner, E. S. Gardiner, S. L. King, K. W. McLeod, C. A. Miller, J. A. Nyman, G. P. Shaffer, and L. Dimov. 2006. Long-term success of stump sprouts in baldcypress. In : K. F. Connor (ed.). Proceedings of the Thirteenth Biennial Southern Silviculture Research Conference. General Technical Report SRS-92, Asheville, NC. USDA Forest Service, Southern Research Station. p. 559-563.

McLeod, K. W., M. R. Reed, B. P. Moyer, and T. G. Ciravolo. 2006. Species selection trials and silvicultural techniques for the restoration of bottomland hardwood forests - A 10 year review. In: K. F. Connor (ed.). Proceedings of the Thirteenth Biennial Southern Silviculture Research Conference. General Technical Report SRS-92, Asheville, NC. USDA Forest Service, Southern Research Station. P. 256-259.



Chambers, J. L., W. H. Conner, J. W. Day, S. P. Faulkner, E. S. Gardiner, M. S. Hughes, R. F. Keim, S. L. King, K. W. McLeod, C. A. Miller, J. A., Nyman, and G. P. Shaffer. 2005. Conservation, Protection and Utilization of Louisiana's Coastal Wetland Forests. Final Report to the Governor of Louisiana from the Coastal Wetland Forest Conservation and Use Science Working Group. (special contributions from W. M. Aust, R. A. Goyer, G. J. Lenhard, R. F. Souther-Effler, D. A. Rutherford, and W. E. Kelso.). 121p. Available from: Louisiana Governor's Office of Coastal Activities, 1051 N. Third St. Capitol Annex Building, Suite 138, Baton Rouge, LA 70802.

Chambers, J. L., R. F. Keim, W. H. Conner, J. W. Day Jr., S. P. Faulkner, E. S. Gardiner, M. S. Hughes, S. L. King, K. W. McLeod, C. A. Miller, J. A. Nyman, and G. P. Shaffer. 2005. Conservation of Louisiana's coastal wetland forests. In: T.F. Shupe and M.A. Dunn (eds.). Louisiana Natural Resources Symposium. Louisiana State University. Baton Rouge, LA. p. 117-135.

Imm, D. W. and K. W. McLeod. 2005. Plant Communities. In: J. C. Kilgo and J. I. Blake (eds.). *Ecology and Management of a Forested Landscape: 50 Years on the Savannah River Site*. Island Press. Washington, DC. p. 106-161.

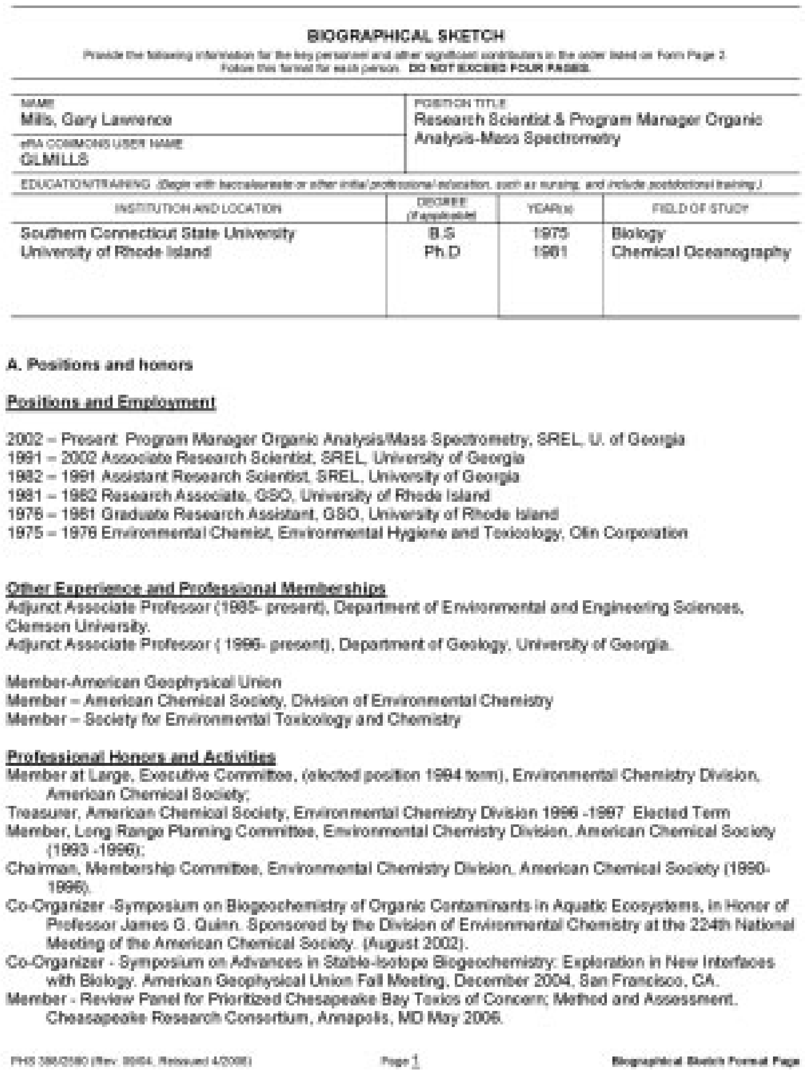
Coleman, M. D. et al. (including K. W. McLeod). 2004. Production of short rotation woody crops grown with a range of nutrient and water availability: Establishment report and first-year responses. USDA Forest Service. Southern Research Station. General Technical Report SRS-72.

McLeod, K. W. and M. K. Burke. 2004. Photosynthetic potential of laurel oak seedlings following canopy manipulation. p. 513-19. In: Connor, K. F. (ed.) Proceedings of the 12th Biennial Southern Silviculture Conference. GTR-71. Asheville, NC, USDA Forest Service. Southern Research Station.

Punshon, T., P. M. Bertsch, A. Lanzirotti, K. McLeod, and J. Berger. 2003. Geochemical signature of sediment remobilization: A contaminated wetland revealed by spatially resolved x-ray microanalysis of annual rings of *Salix nigra*. Environmental Science and Technology 37: 1766-1774.

McLeod, K. W. and T. G. Ciravolo. 2003. Sensitivity of water tupelo (*Nyssa aquatica*) and baldcypress (*Taxodium distichum*) seedlings to manganese-enrichment under water saturated conditions. Environmental Toxicology and Chemistry 22:2948-2951.

Conner, W. H., K. W. McLeod, and E. Colodney. 2002. Restoration methods for deepwater swamps. p. 39-42. In M. M. Holland, M. L. Warren, and J. A. Stanturf (eds.). Proceedings of a conference on *Sustainability of Wetlands and Water Resources: how well can riverine wetlands continue to support society into the 21st century?* Gen. Tech. Rep. SRS-50. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station.



BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Mills, Gary Lawrence	POSITION TITLE Research Scientist & Program Manager Organic Analysis-Mass Spectrometry
eRA COMMONS USER NAME GLMILLS	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Southern Connecticut State University	B.S	1975	Biology
University of Rhode Island	Ph.D	1981	Chemical Oceanography

A. Positions and honors

Positions and Employment

2002 – Present Program Manager Organic Analysis/Mass Spectrometry, SREL, U. of Georgia
1991 – 2002 Associate Research Scientist, SREL, University of Georgia
1982 – 1991 Assistant Research Scientist, SREL, University of Georgia
1981 – 1982 Research Associate, GSO, University of Rhode Island
1976 – 1981 Graduate Research Assistant, GSO, University of Rhode Island
1975 – 1976 Environmental Chemist, Environmental Hygiene and Toxicology, Olin Corporation

Other Experience and Professional Memberships

Adjunct Associate Professor (1985- present), Department of Environmental and Engineering Sciences, Clemson University.
Adjunct Associate Professor (1996- present), Department of Geology, University of Georgia.

Member-American Geophysical Union
Member – American Chemical Society, Division of Environmental Chemistry
Member – Society for Environmental Toxicology and Chemistry

Professional Honors and Activities

Member at Large, Executive Committee, (elected position 1994 term), Environmental Chemistry Division, American Chemical Society;
Treasurer, American Chemical Society, Environmental Chemistry Division 1996 -1997 Elected Term
Member, Long Range Planning Committee, Environmental Chemistry Division, American Chemical Society (1993 -1996);
Chairman, Membership Committee, Environmental Chemistry Division, American Chemical Society (1990-1996).
Co-Organizer -Symposium on Biogeochemistry of Organic Contaminants in Aquatic Ecosystems, in Honor of Professor James G. Quinn. Sponsored by the Division of Environmental Chemistry at the 224th National Meeting of the American Chemical Society. (August 2002).
Co-Organizer - Symposium on Advances in Stable-Isotope Biogeochemistry: Exploration in New Interfaces with Biology. American Geophysical Union Fall Meeting, December 2004, San Francisco, CA.
Member - Review Panel for Prioritized Chesapeake Bay Toxics of Concern; Method and Assessment. Cheasapeake Research Consortium, Annapolis, MD May 2006.

B. Selected peer reviewed publications (in chronological order)

Mills, G.L. and J.G. Quinn. (1979). Determination of organic carbon in marine sediments by persulfate oxidation. Chemical Geology 25:155-162.

Mills, G.L. and J.G. Quinn. (1981). Isolation of dissolved organic matter and copper-organic complexes from estuarine waters using C18 reverse-phase liquid chromatography. Marine Chemistry 10:93-103.

Mills, G.L., A.K. Hanson, Jr., J.G. Quinn, W.R. Lamella, and N.D. Chasteen. (1982). Chemical studies of copper-organic complexes isolated from estuarine waters using C18 reverse-phase liquid chromatography. Marine Chemistry 11:355-377.

Hoffman, E.J., J.S. Latimer, G.L. Mills, and J.G. Quinn. (1983). Petroleum hydrocarbons in urban runoff from a commercial land use area. Journal of the Water Pollution Control Federation 54:1517-1525.

Hoffman, E.J., G.L. Mills, J.S. Latimer, and J.G. Quinn. (1983). Annual fluxes of petroleum hydrocarbons to the coastal environment via urban runoff. Canadian Journal of Fisheries and Aquatic Sciences 40:41-53.

Hoffman, E.J., G.L. Mills, J.S. Latimer, and J.G. Quinn. (1984). Urban runoff as a source of polycyclic aromatic hydrocarbons to coastal waters. Environmental Science and Technology 18:580-587.

Mills, G.L. and J.G. Quinn. (1984). Dissolved copper and copper-organic complexes in the Narragansett Bay Estuary. Marine Chemistry 15:151-172.

Hoffman, E.J., J.S. Latimer, C.D. Hunt, G.L. Mills, and J.G. Quinn. (1985). Stormwater runoff from highways: chemical and physical characteristics and implications for treatment. Water, Air and Soil Pollution 25:349-364.

Latimer, J.S., G.L. Mills, E.J. Hoffman, and J.G. Quinn.(1985). Treatment of solids and petroleum hydrocarbons in storm runoff at a commercial land use utilizing an on-site detention basin. Bulletin of Environmental Contamination and Toxicology 36: 548-555.

Douglas G.S., G.L. Mills, and J.G. Quinn. (1986). Organic copper and chromium complexes in the interstitial waters of Narragansett Bay sediments. Marine Chemistry 19:161-174.

Mills, G.L., E. McFadden, and J.G. Quinn. (1986). Chromatographic studies of dissolved organic matter and copper-organic complexes isolated from estuarine waters. Marine Chemistry 20:313-325.

Loehle, C., P.M. Bertsch, and G.L. Mills. (1986). An Evaluation of Chemical Speciation in the Metal Transport Model MEXAMS. Environmental Software 1: 106-112.

Mills, G.L., D.C. Schwind, and D.C. Adriano. (1988). Preconcentration and analysis of tetraphenylboron and diphenylborinic acid in natural waters using C18 reverse-phase liquid chromatography. Chemosphere 17:937-942.

Mills, G.L., G.S. Douglas, and J.G. Quinn. (1989). Dissolved organic copper concentrations in an anoxic basin located in the Pettaquamscutt River estuary. Marine Chemistry 26:277-288.

Mills, G.L. and D.C. Schwind. (1989). Photochemical degradation of tetraphenylboron and diphenylborinic acid sensitized by dissolved organic matter in natural water. Environmental Toxicology and Chemistry 9:569-574.

Mills, G.L., D. Kaplan, D. Schwind, and D.C. Adriano. (1989). Surface facilitated chemical degradation of tetraphenylboron in soil. Journal of Environmental Quality 19:135-140.

Shorten, C.V., A.W. Elzerman, and G.L. Mills. (1989). Methods for the determination of PAH desorption kinetics in coal fines and coal contaminated sediments. Chemosphere 20:137-160.

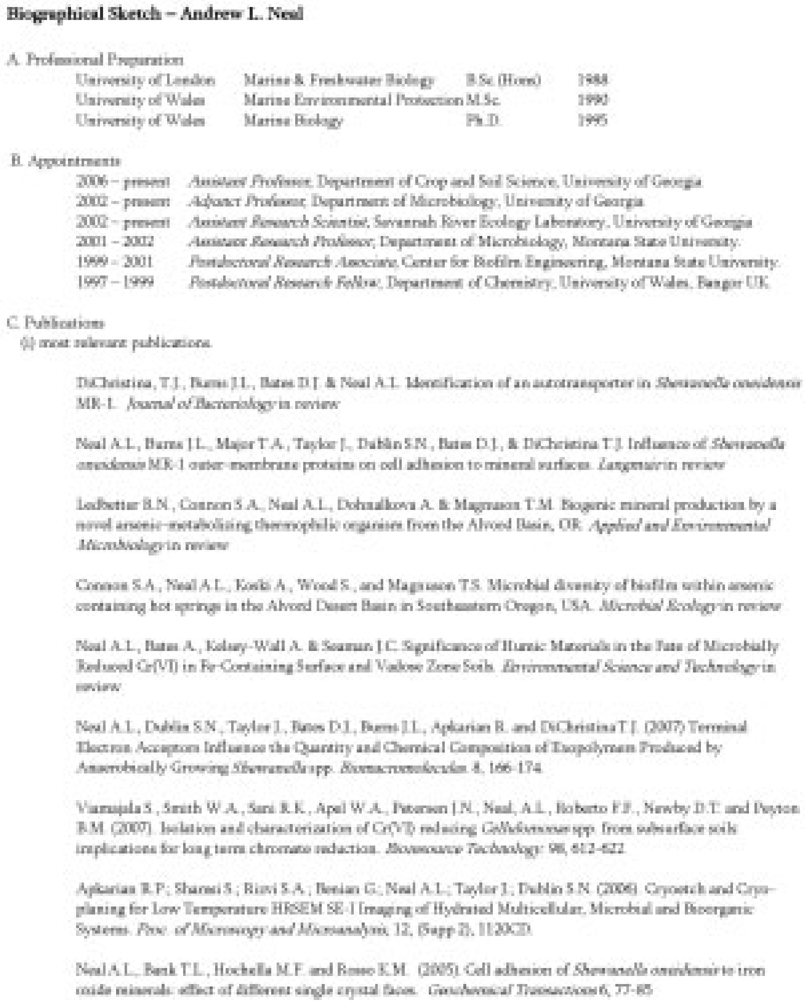
Sandhu, S.S. and G.L. Mills. (1991). Mechanisms of mobilization and attenuation of inorganic contaminants in coal ash basins. In: Emerging Technologies in Hazardous Waste Management II, D.W Tedder and F.G. Pohland, Eds., American Chemical Society, Washington, D.C. pp. 342-364.

Chin, P.F. and G.L. Mills. (1991). Kinetics and mechanisms of kaolinite dissolution: effects of organic ligands. Chemical Geology 90:307-317.

Sandhu, S.S. and G.L. Mills. (1992). Leachability of Ni, Cd, Cr, and As from coal ash impoundments of different age on the Savannah River Site. In: Coal and Coal Combustion Residues, K.S. Sajwan, D.C. Adriano, and R.F. Keefer, Lewis Publishers, Chelsea, Michigan.

Sandhu, S.S. and G.L. Mills. (1993). Leachability of Ni, Cd, Cr, and As from coal ash impoundments of different age on the Savannah River Site. In: Trace Elements in Coal and Coal Combustion Residues, R. F. Keefer and K.S. Sajwan (Eds), pp. 165-182. Lewis Publishers, Boca Raton, Florida.

Sandhu, S.S. K.S. Sajwan, G.L. Mills, and F.Harrison. (1994). Effects of leachate form coal ash basins of varying age on groundwater quality. In: Hydrology Days. 14th edition. American Geophysical Union, Atherton, California pp.383-394.



Biographical Sketch – Andrew L. Neal

A. Professional Preparation

University of London	Marine & Freshwater Biology	B.Sc. (Hons)	1988
University of Wales	Marine Environmental Protection	M.Sc.	1990
University of Wales	Marine Biology	Ph.D.	1995

B. Appointments

2006 – present	*Assistant Professor,* Department of Crop and Soil Science, University of Georgia
2002 – present	*Adjunct Professor,* Department of Microbiology, University of Georgia
2002 – present	*Assistant Research Scientist,* Savannah River Ecology Laboratory, University of Georgia
2001 – 2002	*Assistant Research Professor,* Department of Microbiology, Montana State University.
1999 – 2001	*Postdoctoral Research Associate,* Center for Biofilm Engineering, Montana State University.
1997 – 1999	*Postdoctoral Research Fellow,* Department of Chemistry, University of Wales, Bangor UK.

C. Publications

(i) most relevant publications

DiChristina, T.J., Burns J.L., Bates D.J. & Neal A.L. Identification of an autotransporter in *Shewanella oneidensis* MR-1. *Journal of Bacteriology* in review

Neal A.L., Burns J.L., Major T.A., Taylor J., Dublin S.N., Bates D.J., & DiChristina T.J. Influence of *Shewanella oneidensis* MR-1 outer-membrane proteins on cell adhesion to mineral surfaces. *Langmuir* in review

Ledbetter R.N., Connon S.A., Neal A.L., Dohnalkova A. & Magnuson T.M. Biogenic mineral production by a novel arsenic-metabolizing thermophilic organism from the Alvord Basin, OR. *Applied and Environmental Microbiology* in review

Connon S.A., Neal A.L., Koski A., Wood S., and Magnuson T.S. Microbial diversity of biofilm within arsenic containing hot springs in the Alvord Desert Basin in Southeastern Oregon, USA. *Microbial Ecology* in review

Neal A.L., Bates A., Kelsey-Wall A. & Seaman J.C. Significance of Humic Materials in the Fate of Microbially Reduced Cr(VI) in Fe-Containing Surface and Vadose Zone Soils. *Environmental Science and Technology* in review

Neal A.L., Dublin S.N., Taylor J., Bates D.J., Burns J.L., Apkarian R. and DiChristina T.J. (2007) Terminal Electron Acceptors Influence the Quantity and Chemical Composition of Exopolymers Produced by Anaerobically Growing *Shewanella* spp. *Biomacromolecules* 8, 166-174.

Viamajala S., Smith W.A., Sani R.K., Apel W.A., Petersen J.N., Neal, A.L., Roberto F.F., Newby D.T. and Peyton B.M. (2007). Isolation and characterization of Cr(VI) reducing *Cellulomonas* spp. from subsurface soils: implications for long term chromate reduction. *Bioresource Technology* 98, 612-622.

Apkarian R.P.; Sharma S.; Rizvi S.A.; Benian G.; Neal A.L.; Taylor J.; Dublin S.N. (2006). Cryoetch and Cryo-planing for Low Temperature HRSEM SE-I Imaging of Hydrated Multicellular, Microbial and Bioorganic Systems. *Proc. of Microscopy and Microanalysis,* 12, (Supp 2), 1120CD.

Neal A.L., Bank T.L., Hochella M.F. and Rosso K.M. (2005). Cell adhesion of *Shewanella oneidensis* to iron oxide minerals: effect of different single crystal faces. *Geochemical Transactions* 6, 77-85

Cooper, D.C., Neal, A.L., Kukkadapu, R.K., Picardal, F.F. and Coby A. (2005). Effect of sediment mineralogy on microbiologically induced (DMRB) changes in divalent metal speciation. *Geochimica et Cosmochimica Acta*, 69, 1739-1754.

Jackson B.P., Ranville J. and Neal A.L. (2005). Application of Flow Field Flow Fractionation-ICP-MS for the Study of Uranium Binding to Bacterial Cell Suspensions. *Analytical Chemistry* 77, 1393-1397.

Magnuson T.M., Neal A.L. and Geesey G.G. (2004). Combining *in situ* reverse transcriptase polymerase chain reaction, optical microscopy and X-ray photoelectron spectroscopy to investigate mineral surface associated microbial activities. *Microbial Ecology* 48, 578-588.

Neal A. L., Amonette J. E., Peyton B. M. and Geesey G. G. (2004) Uranium complexes formed at hematite surfaces colonized by sulfate-reducing bacteria. *Environmental Science and Technology* 38, 3019-3027.

Neal A. L., Clough, L.K., Perkins T.D. and Magnuson T.M. (2004) Gene expression, surface-associated growth, and mineral transformations by *Geobacter pelophilus* on solid-phase mineral surfaces. *FEMS Microbial Ecology* 49, 163-169.

Neal A.L., Rosso K.M., Geesey G.G., Gorby Y.A. and Little B.J. (2003) Surface structure effects on direct reduction of iron oxides by *Shewanella oneidensis*. *Geochimica et Cosmochimica Acta* 67, 4489-4503.

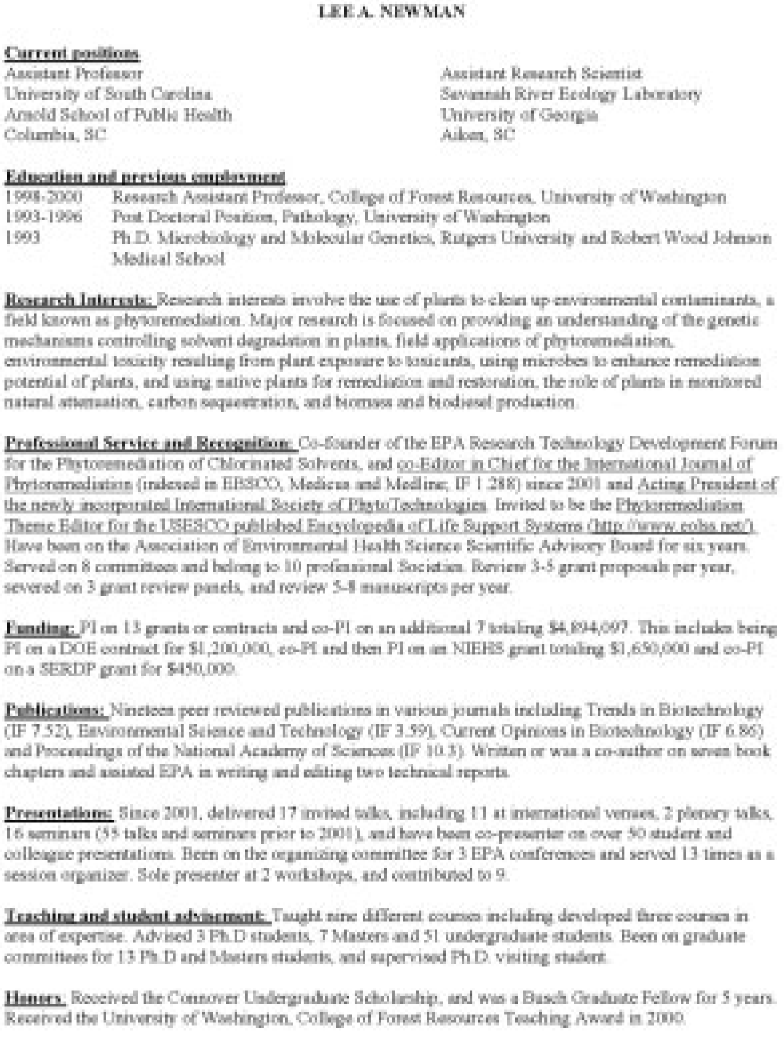
Neal A.L., Lowe K., Daulton T., Jones-Meehan J. and Little B.J. (2002) Oxidation state of chromium associated with cell surfaces of *Shewanella oneidensis* during chromate reduction. *Applied Surface Science* 202, 150-159.

Geesey G.G., Neal A.L., Suci P.A. and Peyton B.M. (2002) A review of spectroscopic methods for characterizing microbial transformation of minerals. *Journal of Microbiological Methods* 51, 125-139.

Neal A.L., Techkarnjanaruk S., Dohnalkova A., McCready D., Peyton B.M. and Geesey G.G. (2001) Iron sulfides and sulfur species produced at hematite surfaces in the presence of sulfate-reducing bacteria. *Geochimica et Cosmochimica Acta* 65, 223-235.

Experience in Environmental Microbiology
Metal metabolism by bacteria lies at the heart of Dr. Neal's research which falls into distinct yet related areas: metal and sulfur metabolism in soil and sedimentary environments; bioremediation of heavy metals and radionuclides, including nanomaterials, by sub-surface bacteria; and transport of bacterial cells in porous media. Each of these tasks is tackled employing a range of spectroscopic techniques including electron (x-ray photoelectron), x-ray (x-ray absorption) and vibrational (Raman and FT-infrared) techniques. Dr. Neal is particularly interested in developing real time, spatially coupled analyses - the combination of spectroscopy with molecular biological techniques to provide gene expression information at the same time as chemical information. Currently funded research is elucidating the molecular basis of adhesion of iron reducing bacteria to iron oxide mineral surfaces - an important process in environmental biofilm formation and the direct reduction of iron oxides in soil and subsurface environments, as well as establishing the fate of ZnO nanoparticles in the presence of soil bacteria, and bacterial effects upon nanoparticle transport and toxicity to nematode worms. He continues to work in the areas of the fate of heavy metal and radionuclide contamination in the presence of sulfate and iron reducing bacteria in complex sedimentary environments.

Graduate Students Advised (1): Elizabeth A. Burgess, Department of Microbiology, University of Georgia, Athens GA



LEE A. NEWMAN

Current positions

Assistant Professor University of South Carolina Arnold School of Public Health Columbia, SC	Assistant Research Scientist Savannah River Ecology Laboratory University of Georgia Aiken, SC

Education and previous employment

1998-2000	Research Assistant Professor, College of Forest Resources, University of Washington
1993-1996	Post Doctoral Position, Pathology, University of Washington
1993	Ph.D. Microbiology and Molecular Genetics, Rutgers University and Robert Wood Johnson Medical School

Research Interests: Research interests involve the use of plants to clean up environmental contaminants, a field known as phytoremediation. Major research is focused on providing an understanding of the genetic mechanisms controlling solvent degradation in plants, field applications of phytoremediation, environmental toxicity resulting from plant exposure to toxicants, using microbes to enhance remediation potential of plants, and using native plants for remediation and restoration, the role of plants in monitored natural attenuation, carbon sequestration, and biomass and biodiesel production.

Professional Service and Recognition: Co-founder of the EPA Research Technology Development Forum for the Phytoremediation of Chlorinated Solvents, and co-Editor in Chief for the International Journal of Phytoremediation (indexed in EBSCO, Medicus and Medline; IF 1.288) since 2001 and Acting President of the newly incorporated International Society of PhytoTechnologies. Invited to be the Phytoremediation Theme Editor for the USESCO published Encyclopedia of Life Support Systems (http://www.eolss.net/). Have been on the Association of Environmental Health Science Scientific Advisory Board for six years. Served on 8 committees and belong to 10 professional Societies. Review 3-5 grant proposals per year, severed on 3 grant review panels, and review 5-8 manuscripts per year.

Funding: PI on 13 grants or contracts and co-PI on an additional 7 totaling $4,894,097. This includes being PI on a DOE contract for $1,200,000, co-PI and then PI on an NIEHS grant totaling $1,650,000 and co-PI on a SERDP grant for $450,000.

Publications: Nineteen peer reviewed publications in various journals including Trends in Biotechnology (IF 7.52), Environmental Science and Technology (IF 3.59), Current Opinions in Biotechnology (IF 6.86) and Proceedings of the National Academy of Sciences (IF 10.3). Written or was a co-author on seven book chapters and assisted EPA in writing and editing two technical reports.

Presentations: Since 2001, delivered 17 invited talks, including 11 at international venues, 2 plenary talks, 16 seminars (55 talks and seminars prior to 2001), and have been co-presenter on over 50 student and colleague presentations. Been on the organizing committee for 3 EPA conferences and served 13 times as a session organizer. Sole presenter at 2 workshops, and contributed to 9.

Teaching and student advisement: Taught nine different courses including developed three courses in area of expertise. Advised 3 Ph.D students, 7 Masters and 51 undergraduate students. Been on graduate committees for 13 Ph.D and Masters students, and supervised Ph.D. visiting student.

Honors: Received the Connover Undergraduate Scholarship, and was a Busch Graduate Fellow for 5 years. Received the University of Washington, College of Forest Resources Teaching Award in 2000.

Curriculum Vitae

Christopher S. Romanek

Associate Professor, Department of Geology, University of Georgia, Athens GA 30602.
Associate Research Ecologist, Savannah River Ecology Laboratory, Drawer E, Aiken SC 29802,
(803) 725-5883, FAX 725-3309.
e-mail: romanek@srel.edu

EDUCATION

Ph.D., Geology, Texas A&M University, College Station TX, 1991.
Dissertation: Carbon isotopic fractionation and precipitation kinetics of synthetic aragonite and calcite grown in dilute solutions, 84 pp.

M.S., Geology, University of Florida, Gainesville FL, 1985.
Thesis: Shell growth in the small giant clam, *Tridacna maxima*, revealed by microstructural and stable isotopic variations, 137 pp.

B.S., Geology, Furman University, Greenville SC, 1982.
Senior thesis: Geology of the major satellites of Jupiter and Saturn, 25 pp.

PROFESSIONAL EMPLOYMENT

7/01 to present	***Associate Professor***, Department of Geology, University of Georgia, Athens GA 30602.
7/01 to present	***Associate Research Scientist***, Savannah River Ecology Laboratory, University of Georgia, Drawer E, Aiken SC 29802.
7/97 to 7/01	***Assistant Professor***, Department of Geology, University of Georgia, Athens GA 30602.
3/95 to 7/01	***Assistant Research Scientist***, Savannah River Ecology Laboratory, University of Georgia, Drawer E, Aiken SC 29802.
9/91 to 3/95	***National Research Council Fellow***, Planetary Science Branch, NASA Johnson Space Center, Houston TX 77058.

CURRENT RESEARCH INTERESTS

Stable isotope and sedimentary geochemistry of carbonate minerals; biomineralization and mineral-microbe interactions; planetary geochemistry; isotope tracers in biological and inorganic systems; mass spectrometry, electron-beam imaging/elemental analysis, and other micro-analytical techniques.

AWARDS AND HONORS

2004 ISI Essential Science Indicator (http://www.esi-topics.com/mars/index.html)
1997 Inducted into the J.L. Mann High School Academic Hall of Fame
1996 Letter of Recognition, U.S. Senator Kay Bailey Hutchison.
1996 Space Pioneer Award, National Space Society.
1996 Nominated for Thomas O. Paine Memorial Award.
1996 Stellar Award, Rotary National Award for Space Achievement.
1996 Laurel Award, Aviation Week.
1996 Best science story of 1996, Time Magazine.
1996 Runner-up for Man-of-the Year 1996, Time Magazine.
1996 Top science story, Discovery Magazine.
1996 The Best of What's New, Grand Award Winner, Popular Science Magazine.
1996 Certificate of Recognition, NASA/AASE.
1985 Grant-in-Aid of Research, Sigma Xi, The Scientific Research Society.
1984 Outstanding Achievement in Research, University of Florida.

PUBLICATIONS

Romanek C.S., Beard B. Anbar A. and Andrus C.T.F. Non-traditional stable isotopes in the environmental sciences. In *Environmental Isotopes in Bioremediation and Microbial Degradation Process*, (eds.) C.M. Aelion, P. Hohener, D. Hunkeler and R. Aravena. CRC Press LLC, Boca Raton, FL., in press.

Unrine J.M., Hopkins W.A., **Romanek C.S.** and Jackson B.P. **2007** Efficient bioaccumulation of trace elements in omnivorous amphibian larvae: Implications for amphibian health and contaminant transport. *Environmental Pollution*, accepted with revisions.

Bergeron C.M., Husak J.F., Unrine J.M., **Romanek C.S.** and Hopkins W.A. **2007** Influence of feeding ecology on blood mercury concentrations in four species of turtles. *Environ. Toxicol. Chem.*, accepted with revisions.

Lee Y.-J., **Romanek C.S.** and Wiegel J., **2007** *Clostridium acidotolerans* sp. nov., an anaerobic spore-forming acid-tolerant bacterium from constructed wetland sediment. *International Journal of Systematic and Evolutionary Microbiology*, in press 12/05/06

Novak J.M., Gaines K.F., Cumbee Jr. J.C., Mills G.L., Rodriguez Navarro A. and **Romanek C.S. 2006** Clapper rails as indicator species of estuarine marsh health. In *Studies in Avian Biology*, (eds) R. Greenberg and S. Droege, **32**, 270-281.

Lee Y-J, **Romanek C.S.** Mills G.L. and Wiegel J. **2006** *Gracilibacter thermotolerans* gen. nov., sp. nov., a novel anaerobic thermotolerant bacterium from a constructed wetland receiving acid sulfate water. *International J. Systematic and Evolutionary Microbiology* 56, 2089-2093.

Jimenez Lopez C., Ro**manek C.S.** and Caballero E. **2006** Carbon isotope fractionation in synthetic magnesian calcite. *Geochim. Cosmochim. Acta* 70, 1163-1171

Carroll M., **Romanek C.S.** and Paddock L. **2006** The relationship between the hydrogen and oxygen isotopes of freshwater bivalve shells and their home streams. *Chemical Geology* 234, 211-222.

Zhao W., Weber C., King G.M., **Romanek C.S.**, Zhang C.L., Mills G., Sokolova T. and Wiegel J. **2006** *Thermalkaliphus uzonensis* gen. nov. sp. nov, a new aerobic thermophilic carbon-monoxidetolerant bacterium isolated from a hot spring in Uzon Caldera, Kamchatka. *Extremophiles* 10, 337-345.

Unrine J.M., Jackson B.P., Hopkins W.A. and **Romanek C. 2006** Isolation and partial characterization of proteins involved in maternal transfer of selenium in the western fence lizard (Sceloporus occidentalis). *Environ. Toxicol. &Chem.*, 25, 1864-1867.

Rodriguez Navarro A., **Romanek C.S.** and Gaines K. **2006** Effect of *in ovo* exposure to PCBs and Hg on clapper rail bone mineral chemistry from a contaminated salt marsh in coastal Georgia. *ES&T* 40, 4936 – 4942.

Zhao W., **Romanek C.S.**, Mills G., Wiegel J. and Zhang C.L. **2005** Geochemistry and Microbiology of Hot Springs in Kamchatka, Russia. *Geological Journal of China Universities* 11, 217-223

Shaw-Allen, P.L., **Romanek C.S.**, Bryan A.L. Jr., Brant H. and Jagoe C.H. **2005** Shifts in relative tissue δ^{15}N values in snowy egret nestlings with dietary mercury exposure: A marker for increased protein degradation. *Environ. Sci. & Technol.* 39, 4226-4233.

Lee Y-J, Wagner I., Brice M.E., Kevbrin V.V., Mills G.L., **Romanek C.S.**, and Wiegel J. **2005** *Thermosediminibacter oceani* gen. nov., sp. nov. and *Thermosediminibacter litoriperuensis* sp. nov., new anaerobic thermophilic bacteria isolated from Peru Margin. *Extremophiles* 9, 375-383.

Dion, H.M., **Romanek C.S.**, Hinton T.G. and Bertsch P.M. **2005** ^{137}Cs in Floodplain Sediments of the Lower Three Runs Creek on the DOE Savannah River Site. *Radioanalytical and Nuclear Chemistry* 264, 481-488.

Barton C., Paddock L., **Romanek C.S.**, Maharaj S. and Seaman J. **2005** Metal attenuation processes in a landfill containing coal combustion waste: Implications for remediation. *Environmental Geosciences* 12, 44-55.

Brisbin, I.L., Jr., **Romanek C.S.** and Sturek M.S. **2004** Pigs in a poke: when scientific research sheds new light on assumed "conventional wisdom" in an environmental ethical debate. *Sci Tech. 13, 1-6.*

Pearson A., Huang Z., Ingalls A.E., **Romanek C.S.**, Wiegel J., Freeman K.H., Smittenberg R.H. and Zhang C.L. **2004** Non-marine crenarchaeol in Nevada hot springs. *Appl. Environ. Microbiol.* 70, 5229-5237.

Kevbrin V.V., **Romanek C.S.** and Wiegel J. **2004** Alkalithermophiles: A double challenge from extreme environments. Section VI: Extremophiles and Biodiversity, Vol. 6 "Origins: Genesis, Evolution and the Biodiversity of Life". In: *Cellular Origins, Life in Extreme Habitats and Astrobiology* (COLE) (Ed. J. Seckbach), Kluwer Academic Publishers, Dordrecht, NL., 395-412.

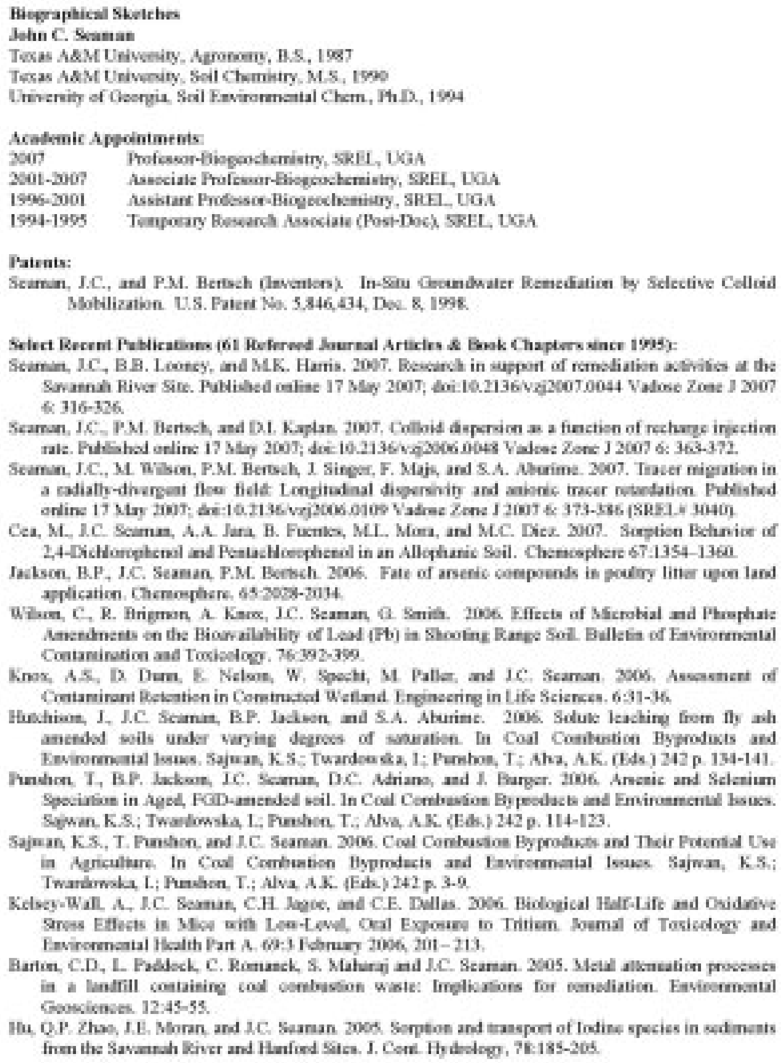
Jimenez-Lopez C., **Romanek C.S.**, Huertas F.J., Ohmoto H. and Caballero E. **2004** Oxygen isotope fractionation in magnesian calcite. *Geochim. Cosmochim. Acta* 68, 3367-3377.

Zhang C.L., Fouke B., Bonheyo G., Peacock A., White D., Huang Y. and **Romanek C. 2004** Lipid biomarkers and carbon isotopes of modern travertine deposits (Yellowstone National Park, USA): Implications for biogeochemical dynamics in hot-spring systems, *Geochim. Cosmochim. Acta* 68, 3157-3169.

Jimenez Lopez C. and **Romanek C.S. 2004** Precipitation kinetics and carbon isotope partitioning of inorganic siderite at 25°C and 1 atm. *Geochim. Cosmochim. Acta* 68, 557-571.

Qin S., Wilson M., **Romanek C.S.** and Hobson K.A. **2004** Time series analysis of elemental data collected from whale baleen. *Environ. Ecol. Stat.* 11, 323-337.

Romanek C.S., Zhang C.L., Li Y., Horita J., Vali H., Cole D.H. and Phelps T.J. **2003** Carbon and hydrogen isotope fractionations associated with dissimilatory Fe(III)-reducing bacteria. *Chem. Geol.* 195, 5-16.



Biographical Sketches
John C. Seaman
Texas A&M University, Agronomy, B.S., 1987
Texas A&M University, Soil Chemistry, M.S., 1990
University of Georgia, Soil Environmental Chem., Ph.D., 1994

Academic Appointments:

2007	Professor-Biogeochemistry, SREL, UGA
2001-2007	Associate Professor-Biogeochemistry, SREL, UGA
1996-2001	Assistant Professor-Biogeochemistry, SREL, UGA
1994-1995	Temporary Research Associate (Post-Doc), SREL, UGA

Patents:

Seaman, J.C., and P.M. Bertsch (Inventors). In-Situ Groundwater Remediation by Selective Colloid Mobilization. U.S. Patent No. 5,846,434, Dec. 8, 1998.

Select Recent Publications (61 Refereed Journal Articles & Book Chapters since 1995):

Seaman, J.C., B.B. Looney, and M.K. Harris. 2007. Research in support of remediation activities at the Savannah River Site. Published online 17 May 2007; doi:10.2136/vzj2007.0044 Vadose Zone J 2007 6: 316-326.

Seaman, J.C., P.M. Bertsch, and D.I. Kaplan. 2007. Colloid dispersion as a function of recharge injection rate. Published online 17 May 2007; doi:10.2136/vzj2006.0048 Vadose Zone J 2007 6: 363-372.

Seaman, J.C., M. Wilson, P.M. Bertsch, J. Singer, F. Majs, and S.A. Aburime. 2007. Tracer migration in a radially-divergent flow field: Longitudinal dispersivity and anionic tracer retardation. Published online 17 May 2007; doi:10.2136/vzj2006.0109 Vadose Zone J 2007 6: 373-386 (SREL# 3040).

Cea, M., J.C. Seaman, A.A. Jara, B. Fuentes, M.L. Mora, and M.C. Diez. 2007. Sorption Behavior of 2,4-Dichlorophenol and Pentachlorophenol in an Allophanic Soil. Chemosphere 67:1354–1360.

Jackson, B.P., J.C. Seaman, P.M. Bertsch. 2006. Fate of arsenic compounds in poultry litter upon land application. Chemosphere. 65:2028-2034.

Wilson, C., R. Brigmon, A. Knox, J.C. Seaman, G. Smith. 2006. Effects of Microbial and Phosphate Amendments on the Bioavailability of Lead (Pb) in Shooting Range Soil. Bulletin of Environmental Contamination and Toxicology. 76:392-399.

Knox, A.S., D. Dunn, E. Nelson, W. Specht, M. Paller, and J.C. Seaman. 2006. Assessment of Contaminant Retention in Constructed Wetland. Engineering in Life Sciences. 6:31-36.

Hutchison, J., J.C. Seaman, B.P. Jackson, and S.A. Aburime. 2006. Solute leaching from fly ash amended soils under varying degrees of saturation. In Coal Combustion Byproducts and Environmental Issues. Sajwan, K.S.; Twardowska, I.; Punshon, T.; Alva, A.K. (Eds.) 242 p. 134-141.

Punshon, T., B.P. Jackson, J.C. Seaman, D.C. Adriano, and J. Burger. 2006. Arsenic and Selenium Speciation in Aged, FGD-amended soil. In Coal Combustion Byproducts and Environmental Issues. Sajwan, K.S.; Twardowska, I.; Punshon, T.; Alva, A.K. (Eds.) 242 p. 114-123.

Sajwan, K.S., T. Punshon, and J.C. Seaman. 2006. Coal Combustion Byproducts and Their Potential Use in Agriculture. In Coal Combustion Byproducts and Environmental Issues. Sajwan, K.S.; Twardowska, I.; Punshon, T.; Alva, A.K. (Eds.) 242 p. 3-9.

Kelsey-Wall, A., J.C. Seaman, C.H. Jagoe, and C.E. Dallas. 2006. Biological Half-Life and Oxidative Stress Effects in Mice with Low-Level, Oral Exposure to Tritium. Journal of Toxicology and Environmental Health Part A. 69:3 February 2006, 201 – 213.

Barton, C.D., L. Paddock, C. Romanek, S. Maharaj and J.C. Seaman. 2005. Metal attenuation processes in a landfill containing coal combustion waste: Implications for remediation. Environmental Geosciences. 12:45-55.

Hu, Q.P. Zhao, J.E. Moran, and J.C. Seaman. 2005. Sorption and transport of Iodine species in sediments from the Savannah River and Hanford Sites. J. Cont. Hydrology, 78:185-205.

Cea, M., J.C. Seaman, A.A. Jara, M.L. Mora, and M.C. Diez. 2005. Describing chlorophenol sorption on variable-charge soil using the triple-layer model. J. Colloid Interface Sci. 292 (1): 171-178.

Rebel, K.T., S.J. Riha, J.C. Seaman, and C. Barton. 2005. The use of dynamic modeling in optimizing tritium phytoremediation. Environmental Geosciences. 12:4, 243-250.

Seaman, J.C., V.M. Vulava, A.G. Sowder, B.P. Jackson, S.A. Aburime, and P.M. Bertsch. 2005. Metal extractability from contaminated SRS sediments: Comparison of column and batch results. Environmental Geosciences. 12:4, 235-242.

Kelsey-Wall, A., J.C. Seaman, C.H. Jagoe, C.E. Dallas, K.F. Gaines, 2005. Rodents as receptor species at a tritium disposal site. J. Environmental Radioactivity, 82: 95-104.

Hitchcock, D.R., C.D. Barton, K.T. Rebel, J. Singer, J.C. Seaman, J.D. Strawbridge, S.J. Riha, and J.I. Blake. 2005. A Containment and Disposition Strategy for Tritium-Contaminated Groundwater at the Savannah River Site, South Carolina, United States. Environmental Geosciences. 12:17-28.

Hitchcock, D.R., K.T. Rebel, C.D. Barton, J. Singer, J.C. Seaman, J.D. Strawbridge, S.J. Riha, and J.I. Blake. 2004. Tritium phytoremediation at the Savannah River Site, SC USA: Water management, remediation, and hydrological research. Proceeding of the 6th Int. Conf. On Hydroscience and Engineering (ICHE-2004), May 30-June 3, Brisbane, Australia.

Guerin, M., J.C. Seaman, C. Lehmann, and A. Jurgenson. 2004. Acoustic and electroacoustic characterization of variable charge mineral suspensions. Clays Clay Min. 52:158-170.

Guerin, M., J.C. Seaman. 2004. Characterizing Clay Mineral Suspensions Using Acoustic and Electroacoustic Spectroscopy- a review. Clays Clay Min. 52:145-157.

Aburime, S.A., J.C. Seaman, J.H. Singer, and T.S. Steenhuis. 2003. Reliability of contaminant transport modeling on vadose zone sampling methods in structured soils Proceedings of the 2002 National Conference on Environmental Science and Technology, Uzochukwu et al., eds. Greensboro, NC, Battelle Press Publishing. pg. 233-242.

Hutchison, J.M., J.C. Seaman, S.A. Aburime, and D.E. Radcliffe. 2003. Solute transport in variably saturated soil. Vadose Zone J. 2:702-714.

Jackson, B.P., P.M. Bertsch, M.L. Cabrera, J.J. Camberato, J.C. Seaman, and C.W. Wood. 2003. Trace element speciation in poultry litter. J. Environ. Qual. 32:535-540.

Jackson, B.P., J.C. Seaman, and W. Hopkins. 2003. Arsenic and selenium speciation in a fly ash basin system. Ed. Sajwan, Alva, and Keefer. In Chemistry of Trace Elements in Fly Ash. Kluwer, Ind. pg. 203-218.

Barton, C., C. Romanek, J.C. Seaman, and L. Paddock. 2003. Geochemistry of an abandoned landfill containing coal combustion waste: Implications for remediation. Ed. Sajwan, Alva, and Keefer. In Chemistry of Trace Elements in Fly Ash. Kluwer, Ind. pg. 105-141.

Seaman, J.C., M. Guerin, B.P. Jackson, P.M. Bertsch, and J.F. Ranville. 2003. Analytical techniques for characterizing complex mineral assemblages: Mobile soil and groundwater colloids, p. 271-309, In H. M. Selim and W. L. Kingery, eds. Geochemical and hydrological reactivity of heavy metals in soils. Lewis Publishers, New York.

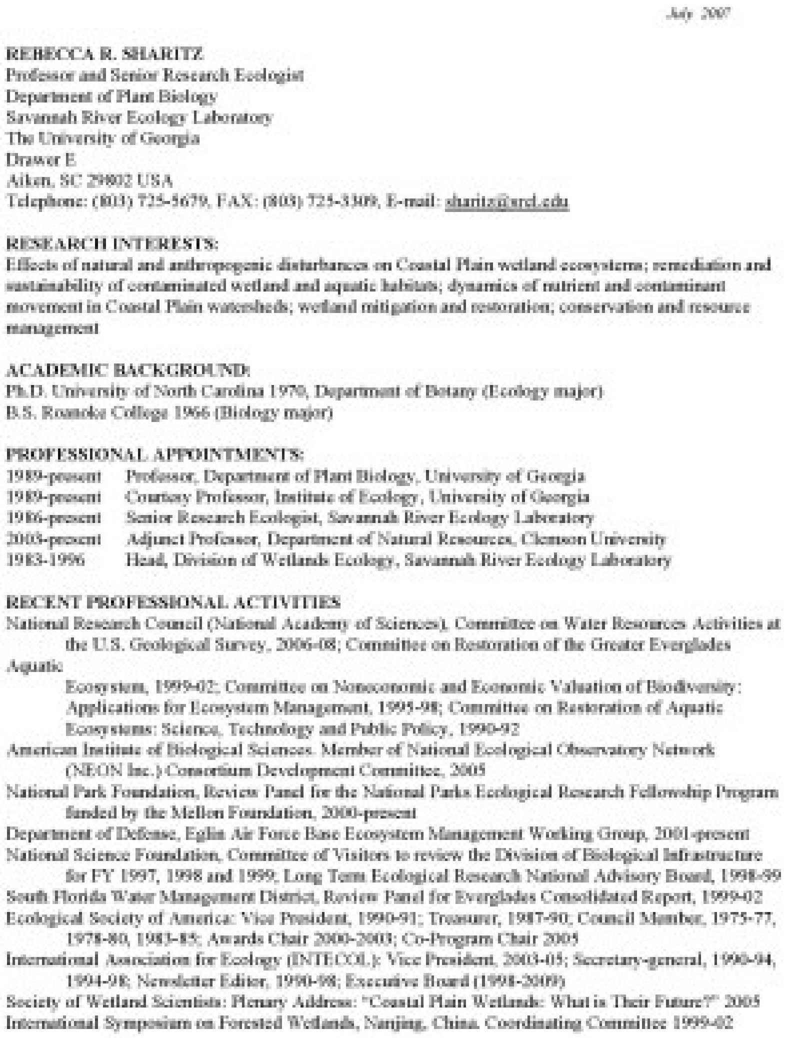
Seaman, J.C., J. Hutchison, B.P. Jackson, and V. Vulava. 2003. In Situ Treatment of Metals in Contaminated Soils using Phytate. J. Environ. Qual. 32:153-161.

Guerin, M. and J.C. Seaman. 2002. A self-consistent treatment of diffuse layer ions in triple layer models. J. Colloid Interface Sci., 250:492-495.

Vulava, V.M., E.B. Perry, C.S. Romanek, and J.C. Seaman. 2002. Multiple inert gases as partitioning tracers for determination of hydrologic parameters. Environ. Sci. & Technol. 36:254-262.

Ishak, C.F., J.C. Seaman, and W.P. Miller. 2002. Contaminant mobility in repacked soil columns amended with fly ash and flue-gas gypsum. Water, Air & Soil Pollution. 134:285-303.

Seaman, J.C., T. Meehan, and P.M. Bertsch, 2001. Immobilization of 137Cs and U in contaminated sediments using soil amendments. J. Environ. Qual. July-August, 30:1206-1213.



July 2007

REBECCA R. SHARITZ
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Department of Plant Biology
Savannah River Ecology Laboratory
The University of Georgia
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RESEARCH INTERESTS:

Effects of natural and anthropogenic disturbances on Coastal Plain wetland ecosystems; remediation and sustainability of contaminated wetland and aquatic habitats; dynamics of nutrient and contaminant movement in Coastal Plain watersheds; wetland mitigation and restoration; conservation and resource management

ACADEMIC BACKGROUND:

Ph.D. University of North Carolina 1970, Department of Botany (Ecology major)
B.S. Roanoke College 1966 (Biology major)

PROFESSIONAL APPOINTMENTS:

1989-present	Professor, Department of Plant Biology, University of Georgia
1989-present	Courtesy Professor, Institute of Ecology, University of Georgia
1986-present	Senior Research Ecologist, Savannah River Ecology Laboratory
2003-present	Adjunct Professor, Department of Natural Resources, Clemson University
1983-1996	Head, Division of Wetlands Ecology, Savannah River Ecology Laboratory

RECENT PROFESSIONAL ACTIVITIES

National Research Council (National Academy of Sciences), Committee on Water Resources Activities at the U.S. Geological Survey, 2006-08; Committee on Restoration of the Greater Everglades Aquatic Ecosystem, 1999-02; Committee on Noneconomic and Economic Valuation of Biodiversity: Applications for Ecosystem Management, 1995-98; Committee on Restoration of Aquatic Ecosystems: Science, Technology and Public Policy, 1990-92
American Institute of Biological Sciences. Member of National Ecological Observatory Network (NEON Inc.) Consortium Development Committee, 2005
National Park Foundation, Review Panel for the National Parks Ecological Research Fellowship Program funded by the Mellon Foundation, 2000-present
Department of Defense, Eglin Air Force Base Ecosystem Management Working Group, 2001-present
National Science Foundation, Committee of Visitors to review the Division of Biological Infrastructure for FY 1997, 1998 and 1999; Long Term Ecological Research National Advisory Board, 1998-99
South Florida Water Management District, Review Panel for Everglades Consolidated Report, 1999-02
Ecological Society of America: Vice President, 1990-91; Treasurer, 1987-90; Council Member, 1975-77, 1978-80, 1983-85; Awards Chair 2000-2003; Co-Program Chair 2005
International Association for Ecology (INTECOL): Vice President, 2003-05; Secretary-general, 1990-94, 1994-98; Newsletter Editor, 1990-98; Executive Board (1998-2009)
Society of Wetland Scientists: Plenary Address: "Coastal Plain Wetlands: What is Their Future?" 2005
International Symposium on Forested Wetlands, Nanjing, China. Coordinating Committee 1999-02

SELECTED PUBLICATIONS (>150 refereed publications):

Textbook:

Batzer, D. P. and **R. R. Sharitz** (eds). 2006. *Ecology of Freshwater and Estuarine Wetlands*. University of California Press, Berkeley, CA. 568 p.

Recent Journal articles:

De Steven, D. and **R. R. Sharitz**. 2007. Transplanting native dominant plants to facilitate community development in restored Coastal Plain wetlands. Wetlands (in press).

Wrona, A., D. Batzer, M. Alber and **R. Sharitz**. 2007. Savannah River, Georgia: science to support adaptive implementation of environmental flows to a large coastal river, floodplain and estuary. Water Resources Impact (in press).

Landman, G. B., R. K. Kolka and **R. R. Sharitz**. 2007. Soil seed bank analysis of planted and naturally revegetating thermally-disturbed riparian wetland forests. Wetlands 27:211-223.

Young, A. S., S.-M. Chang and **R. R. Sharitz**. 2007. Reproductive ecology of a federally endangered legume, *Baptisia arachnifera*, and its more widespread congener, *B. lanceolata* (Fabaceae). American Journal of Botany 94:228-236.

Zhao, D., B. Allen and **R. R. Sharitz**. 2006. Twelve-year response of old-growth southeastern bottomland hardwood forests to disturbance from Hurricane Hugo. Canadian Journal of Forest Research 36:3136-3147.

Sharitz, R. R., C. D. Barton and D. De Steven. 2006. Tree plantings in depression wetland restorations show mixed success (South Carolina). Ecological Restoration 24:114-115.

De Steven, D., **R. R. Sharitz**, J. H. Singer and C. D. Barton. 2006. Testing a passive revegetation approach for restoring Coastal Plain depression wetlands. Restoration Ecology 14:452-460.

Battaglia, L. L. and **R. R. Sharitz**. 2006. Responses of floodplain forest species to spatially condensed gradients: a test of the flood-shade tolerance tradeoff hypothesis. Oecologia 147:108-118.

LaJeunesse, S. D., J. J. Dilustro, **R. R. Sharitz** and B. S. Collins. 2006. Ground layer carbon and nitrogen cycling and legume nitrogen inputs following fire in mixed pine forests. American Journal of Botany 93:84-93.

Mulhouse, J. M., D. De Steven, R. F. Lide and **R. R. Sharitz**. 2005. Effects of dominant species on vegetation change in Carolina bay wetlands following a multi-year drought. Journal of the Torrey Botanical Society 132:411-420.

Allen, B. P., **R. R. Sharitz** and P. C. Goebel. 2005. Twelve years post-hurricane liana dynamics in an old-growth southeastern floodplain forest. Forest Ecology and Management 218:259-269.

Mulhouse, J. M., L. E. Burbage and **R. R. Sharitz**. 2005. Seed bank-vegetation relationships in herbaceous Carolina bays: responses to climatic variability. Wetlands 25:738-747.

Hinton, T. G., A. S. Knox, D. I. Kaplan and **R. Sharitz**. 2005. Phytoextraction of uranium and thorium by native trees in a contaminated wetland. Journal of Radioanalytical and Nuclear Chemistry 264:417-422.

Tsyusko, O.V., M.H. Smith, **R.R. Sharitz** and T.C. Glenn. 2005. Genetic and clonal diversity of two cattail species, *Typha latifolia* and *T. angustifolia* (Typhaceae) from Ukraine. American Journal of Botany 92:1161-1169.

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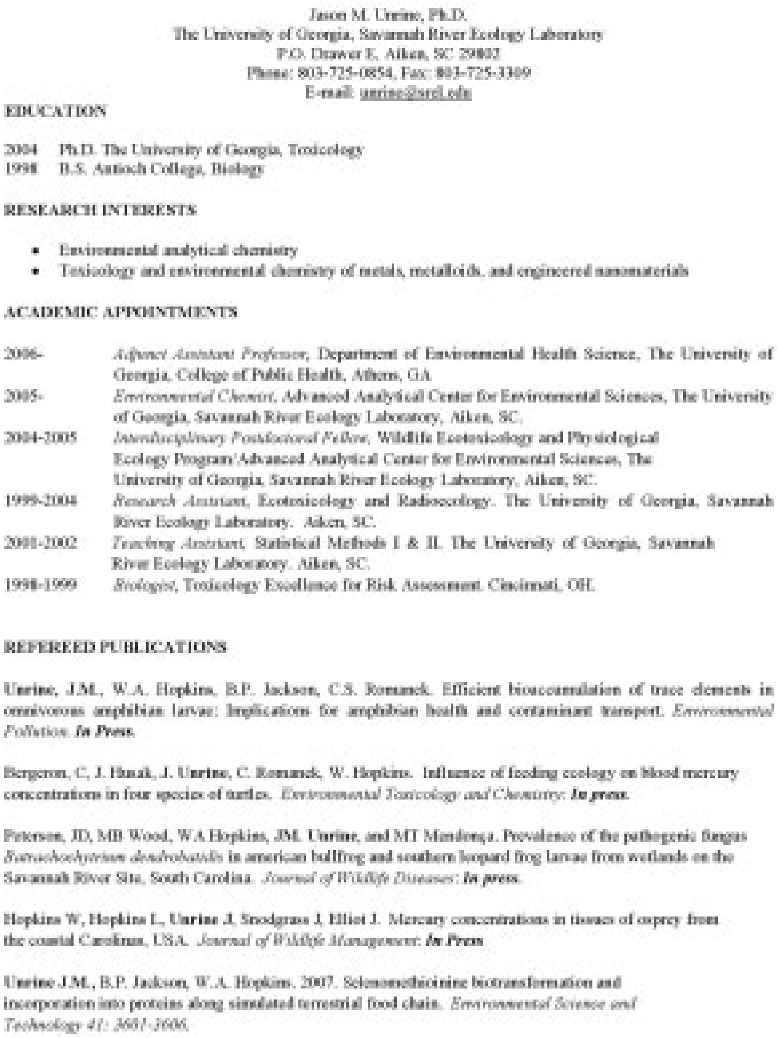

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EDUCATION

2004	Ph.D. The University of Georgia, Toxicology
1998	B.S. Antioch College, Biology

RESEARCH INTERESTS

- Environmental analytical chemistry
- Toxicology and environmental chemistry of metals, metalloids, and engineered nanomaterials

ACADEMIC APPOINTMENTS

2006-	*Adjunct Assistant Professor*, Department of Environmental Health Science, The University of Georgia, College of Public Health, Athens, GA
2005-	*Environmental Chemist*, Advanced Analytical Center for Environmental Sciences, The University of Georgia, Savannah River Ecology Laboratory, Aiken, SC.
2004-2005	*Interdisciplinary Postdoctoral Fellow*, Wildlife Ecotoxicology and Physiological Ecology Program/Advanced Analytical Center for Environmental Sciences, The University of Georgia, Savannah River Ecology Laboratory, Aiken, SC.
1999-2004	*Research Assistant*, Ecotoxicology and Radioecology. The University of Georgia, Savannah River Ecology Laboratory. Aiken, SC.
2001-2002	*Teaching Assistant*, Statistical Methods I & II. The University of Georgia, Savannah River Ecology Laboratory. Aiken, SC.
1998-1999	*Biologist*, Toxicology Excellence for Risk Assessment. Cincinnati, OH.

REFEREED PUBLICATIONS

Unrine, J.M., W.A. Hopkins, B.P. Jackson, C.S. Romanek. Efficient bioaccumulation of trace elements in omnivorous amphibian larvae: Implications for amphibian health and contaminant transport. *Environmental Pollution*. ***In Press.***

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GRANTS

Jason Unrine (P.I.), Paul Bertsch, Olga Tsyusko, Andrew Neal (Co-Is). 2007. The fate and effects of nanosized metal particles examined along a simulated terrestrial foodchain using genomic and microspectroscopic techniques. U.S. EPA, $397,000.

BIOGRAPHY FOR JERALD L. SCHNOOR

(i) Professional Preparation

Iowa State University, Chemical Engineering, B.S. 1972

University of Texas, Environmental Health Engineering, M.S. 1974

University of Texas, Civil Engineering, Ph.D. 1975

Manhattan College, Environmental Modeling (postdoc), 1976

(ii) Appointments

2002–present—Allen S. Henry Chair Professor of Engineering, University of Iowa

1990–present—Co-Director, Center for Global and Regional Environmental Research, University of Iowa

1985–1990—Chair, Department of Civil and Environmental Engineering, University of Iowa

1983–present—Professor, Department of Civil and Environmental Engineering, University of Iowa

1980–1983—Associate Professor, Department of Civil and Environmental Engineering, University of Iowa

1977–1980—Assistant Professor, Department of Civil and Environmental Engineering, University of Iowa

(iii) 5 Publications (selected from 150 journal articles, 6 books, 3 patents)

Boulanger, B., J. Vargo, J.L. Schnoor, and K.C. Hornbuckle. "Detection of Perfluorooctant Surfactants in Great Lakes Water." *Environmental Science & Technology,* 38(15), 4064–4070, 2004.

Boulanger, B., A.M. Peck, J.L. Schnoor, and K.C. Hornbuckle. "Mass Budget of Perfluorooctane Surfactant in Lake Ontario." *Environmental Science & Technology,* 39(1), 74–79, 2005.

McCutcheon, S.C., and J.L. Schnoor, Eds. 2003. *Phytoremediation—Transformation and Control of Contaminants.* New York: John Wiley & Sons. 987 pp.

Mihelcic, J.R., J.C. Crittenden, M.J. Small, D.R. Shonnard, D.R. Hokanson, Q. Zhang, H. Chen, S.A. Sorby, V.U. James, J.W. Sutherland, and J.L. Schnoor. "Sustainability Science and Engineering: The Emergence of a New Metadiscipline." *Environmental Science & Technology,* 37(23), 5314–5324, 2003.

Schnoor, J.L. 1996. *Environmental Modeling: Fate and Transport of Pollutants in Water, Air, and Soil.* New York: Wiley Interscience, 682 pp.

(iv) Synergistic Activities

1. Editor-in-Chief, *Environmental Science & Technology,* 2003–present
2. U.S. EPA Science Advisory Board, 2006–
3. Chair, National Research Council Colloquium, Water Implications of Biofuels, 2007
4. National Research Council, Water Science and Technology Board, 2000–2005
5. Chair, U.S. EPA ORD, Board of Scientific Counselors, 2000–2004
6. Distinguished lectureships:
   - Walter J. Weber Jr. Distinguished Lecturer, University of Michigan, 2004
   - Soil Science Society of America Honorary Lecturer, Soils and Environmental Quality, 2004
   - Henske Distinguished Lecturer Award, Yale University, 2000
   - Sigma Xi Distinguished Lecturer, 1999–2000
   - Association of Environmental Engineering Professors Distinguished Lecturer, 1998
   - Presidential Lecturer, University of Iowa, 1996
7. Awards:
   - Paper of the Year 2005, Award for Integration of Human and Ecological Risk Assessment, *HERA Human and Ecological Risk Assessment,* An International Journal
   - *Soil Science Society of America,* Soils and Environmental Quality, Honorary Lecturer, 2004

- National Academy of Engineering, member, elected 1999–present
- Best Theoretical Paper Award, Environmental Water Resources Institute, ASCE, 2004
- Hancher-Finkbine Medallion, University of Iowa, 2000
- Rudolph Hering Medal, American Society of Civil Engineers, 1998
- Distinguished Fellow Award, Iowa Academy of Science, 1996
- Walter L. Huber Research Prize, American Society of Civil Engineers, 1985

(v) Collaborators & Other Affiliations

(a) Collaborators: Pedro Alvarez, Gregory R. Carmichael, John Crittenden, Larry Erickson, Charles Haas, Keri C. Hornbuckle, Peter Jaffe, Craig Just, Steve McCutcheon, James Merchant, Barbara Minsker, Kenneth Moore, Tatsuaki Nakato, Richard Ney, Gene Parkin, Gary Pierzynski, John Rosazza, Michelle Scherer, Ming-Che Shih, Mitchell Small, Peter Thorne, Richard Valentine, Benoit Van Aken

(b) Graduate and Postgraduate Advisees: Eric Aitchison, Bryan Boulanger, Joel G. Burken, Annette Dietz, Africa Espina, Claudia Espinosa, Sumeet Gandhi, Kirk Hatfield, Shan He, Brad Helland, James Jordahl, Roopa Kamath, Sara Kelley, Thorjorn Larssen, Sijin Lee, Louis A. Licht, Malva Mancuso, Drew C. McAvoy, Sara McMillan, Melissa Mezzari, Nikolaos Nikolaidis, Deborah O'Bannon, Kurtis Paterson, Kimberly Precht, Jeremy Rentz, Sanjay Singhvi, Philip L. Thompson, Benoit Van Aken, John Veenstra, Mark Wiesner, Jong Moon Yoon, Bryan Young

(c) Graduate and Postgraduate Advisors: E. Gus Fruh (deceased), Donald J. O'Connor (deceased), Werner Stumm (deceased)

(vi) Current and Pending Support

- Center for Global and Regional Environmental Research (CGRER), Source of Support: Iowa Department of Commerce, 12/1/2007—on going, $600,000 per year.
- Sensors for CyberEngineering: Monitoring and Modeling the Iowa River for Nutrients and Sediments, Source of Support: Iowa Water Center (ISU) and U of Iowa matching, 3/1/2005–2/28/2007, $109,378.
- CLEANER/WATERS Project Office, Source of Support: University of Illinois (UIUC) and NCSA, 7/1/2005–6/30/2008, $3,000,000 total (subcontract $400,000 to UI–Schnoor).
- Phytoremediation for the Containment and Treatment of Energetic and Propellant Materials on Testing and Training Ranges, Source of Support: SERDP (DOD), 9/1/2005–8/31/2008, $729,975.
- Superfund Basic Research Program, "Effects of Airborne PCBs," Project #5 Schnoor P.I., Source of Support: NIEHS, 5/1/2006–9/30/2010, $750,000.

Chairman MILLER. Dr. Whicker.

STATEMENT OF DR. F. WARD WHICKER, PROFESSOR, RADIOLOGICAL HEALTH SCIENCES, COLORADO STATE UNIVERSITY

Dr. WHICKER. This is supposed to advance, but it is not advancing. Okay. I am a professor emeritus at Colorado State University. I have been in the business of doing radioecology teaching and research for about 45 years now. My familiarity with the Savannah River Ecology Lab stems from spending three years there doing research on my own full-time, and I have had a number of graduate students that have done their research there for their dissertations and theses.

I think in the interest of time I will come back to this one. The importance of the Savannah River Site environment is important to recognize both scientifically as well as in other areas, educationally and so forth. The upper left slide is an aerial view of the Savannah River Site taken from a satellite. It shows mostly green surrounded by farmland and some urbanization. The large reservoir on the right hand of that green blob is our pond, which I am going to come back to in a moment.

But when you are there as a scientist working, you would almost think that you are you in a national park. It has a tremendously diverse wildlife and as many people have said, it has been a National Environmental Research Park since about 1972. These and many other species live there, and they are exposed to contaminants that have resulted from releases from the nuclear reactors and other industrial activities at the site.

One of the main issues and things that the laboratory, Savannah River Laboratory can do is that they can get involved in the question about cleanup. The key to this is determining whether cleanup is really needed at all, not necessarily how to do it, unless it is important to do it. This requires risk analysis and the sciences which underpin the risk analysis.

Cleanup costs, if you plot the level of contamination versus cost, you have two distinct thresholds. The biggest one of which is when you decide to have engineered cleanup. At that point the costs go up by many orders of magnitude, and the SREL science applies directly to that.

I want to give you a case history if I can of Par Pond, because this is, I think, an example that really speaks to the value of the laboratory. This is a large impoundment created for cooling reactors. It operated for about 30 years, and then it was shut down in 1988, because the reactors were shut down, but the reservoir was still there. However, there were some leaks in the dam, and they decided that they needed to figure out what to do.

In order to reduce risk in case the dam should fail, they dropped the lake level 20 feet. This exposed cesium-137 contamination led to designation under CERCLA[1] that something had to be done. This required a management decision. Yet there were several alternatives of how to treat this ranging from draining the reservoir and breaching the dam and repairing the dam and refilling the reservoir to contain the contaminants.

Risk assessment, one risk assessment was done by an outside firm. It was a paper assessment that said that it would be okay for somebody to farm the land, but SREL research showed this not to be the case based upon actual data. It basically showed that cesium-137 has extremely high plant uptake and that moves into the food chain, and it would produce a lifetime risk to somebody living there that would exceed the EPA guideline of one chance in 10,000 of getting a cancer some time in your lifetime. So that was not an acceptable option.

The two remaining options were to fix the sediments in place or to excavate it. There was no feasible way at the time to fix it in place, and so one looked carefully at excavation, and the cost of excavation of this reservoir was going to be $4 billion, at least. So we came down to the best option to repair the dam and fill the reservoir at a cost of about $12 million. This is less than one percent of the excavation.

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[1] CERCLA: The *Comprehensive Environmental Response, Compensation and Liability Act,* commonly known as Superfund.

Then the question arose is what about the health and of humans and ecological impacts of allowing this contaminated reservoir even to exist. Well, the SREL research demonstrated that radiation dose rates to plants and animals were well below the applicable DOE standards. The radiation health risks for hypothetical sport fisherman or hunter would be well below EPA standards, and there would be essentially no risk to other people using the reservoir.

Also, from many years and decades of research on the reservoir, there was never any clear evidence of ecological impacts from either radiation or chemicals, and so that gave one comfort that the radioactivity there was just there, it could be measured, but it wasn't causing any ecological damage.

The outcome was that they did, in fact, repair the dam and refill the pond. It was essentially recovered in about five years. Over $4 billion was saved from this decision. The research that was done to lead to this outcome cost about $200,000 or 800 times less than the cost of that of dredging.

In conclusion, I see I am out of time, SREL should be funded, and I think even expanded as an independent scientific organization. In fact, the SREL research has saved the Government more money than it has received. This Par Pond example I think proves that notion.

A number of these other points have been made by others. Let us see if there is any here I should state. I guess down to the very bottom line. The funding required to maintain the infrastructure is relatively trivial. The cost of not restoring this funding, I think the costs of that are going to be extremely high.

Thank you.

[The prepared statement of Dr. Whicker follows:]

PREPARED STATEMENT OF F. WARD WHICKER

I have been a member of the faculty at Colorado State University (CSU) for about 45 years. I retired from full-time duty about two years ago, but continue to teach and conduct research as a part-time, temporary employee. My field of teaching and research is called "radioecology" which deals with natural and man-made radioactivity in the environment, the movement and accumulation of radioactive materials through the environment and food chains, the effects of radiation on plants and animals, and the assessment of health risks to people exposed to environmental radioactivity. Teaching, research and service have been the primary duties assigned to me at CSU, but I also served as Head of the Department of Radiological Health Sciences from 1998 to 2002. I have had a number of national and international assignments outside of the university over my career and these are briefly summarized in my biographical sketch that accompanies this document.

I have considerable experience working with scientists at the Savannah River Ecology Laboratory (SREL), and spent three years (1982, 1991 and 1992) there conducting full-time research. I also mentored 13 graduate students from CSU who each conducted research projects at SREL over the last 30 years or so. Most of my work at SREL has dealt with the distribution and transport of radioactive contaminants in reactor cooling reservoirs located on the Savannah River Site (SRS). I also spent considerable effort conducting human health risk assessments for various management options of a large, radioactively-contaminated reservoir (Par Pond), which had finished serving its main purpose of cooling hot water from P and R reactors, and which had shown leakage and internal erosion of the dam. I maintain an informal scientific collaboration with Dr. Thomas Hinton, a radioecologist at SREL, but have no financial interest with the laboratory nor with any other organization at the SRS.

My testimony today is intended to provide my personal assessment of the overall value of SREL to the Department of Energy and to science and society in general. The main points I will attempt to make include the following:

- The SRS has enormous ecological, scientific and educational value, in addition to its nationally important programs related to defense, and potential programs related to sustainable energy development.
- There will be a need for environmental assessments at the SRS into the foreseeable future while the government conducts various programs there in the national interest. These programs may include national defense, nuclear fuel fabrication, energy research and production, remediation technologies, etc.
- Portions of this site may be ecologically-threatened by scientifically unwarranted remediation, privatization or new programs that may be ecologically damaging.
- SREL has and can continue to play a critical role at the SRS by providing objective, independent science that contributes information that is vital to decisions on remediation, land management, stewardship and environmental assessments of site activities. SREL research can simultaneously spare valuable ecosystems and save large sums of federal money.
- SREL has a very impressive track record for cost effective, credible research. Unlike some DOE-sponsored laboratories, SREL is a University of Georgia organization that publishes nearly all of its work in peer-reviewed scientific journals without censorship by DOE or other governmentally-affiliated organizations.
- Unique opportunities remain for education (K–12, college, graduate levels and the general public) through SREL outreach programs at the SRS. These opportunities range from basic biology, ecology and numerous environmental sciences to fields with direct application to Site activities such as remediation technology, risk assessment, toxicology, radioecology and geochemistry.

The SRS encompasses over 300 square miles, approximately 85 percent of which is relatively pristine forest lands and aquatic ecosystems (streams, ponds and wetlands). Only about 15 percent of the land area has been developed for roads, parking lots, utility lines and industrial structures. The undeveloped land and waters essentially serve as a large buffer zone that protects the public from potential accidents or routine activities that could release radioactive and chemical contaminants to the environment. The buffer zone concept has functioned extremely well, and only very minor amounts of contamination have reached the lands and waterways that surround the SRS. A satellite view of the SRS clearly shows a roughly circular area of green forest surrounded by farmland and otherwise developed land. The SRS buffer zone provides a very rich and diverse flora and fauna that flourishes in the absence of significant human impact. This landscape provides enhanced air and water quality, not only within the boundaries of the SRS, but also in the surrounding landscape. The SRS serves not only as a sanctuary for fish and wildlife, but also as a nursery for plants and animals that can migrate outside the boundaries of the site, enhancing the environmental quality of surrounding areas.

Scientifically, the SRS is of tremendous value because of its largely undeveloped nature and the fact that it is protected from unauthorized human intrusion. This situation provides extremely rare opportunities to study ecosystems that are not impacted by human activities, and those that may be impacted to various degrees by physical, chemical and radiological agents resulting from site operations. This situation led to the designation of a large portion (nearly 200,000 acres) of the SRS in 1972 as a National Environmental Research Park. The SREL has a distinguished history of over 50 years of existence on the SRS and has provided a tremendous body of knowledge that has contributed to Site operations, science in general, and public education.

Much of the DOE budget in the past 15 years or so has been devoted to environmental cleanup, or remediation, of radioactively/chemically-contaminated lands. Because most residual, long-lived radionuclides such as cesium-137 and plutonium-239 adhere very strongly to soil particles, their removal from contaminated areas by necessity involves removal of the soil or sediment in which the contamination is located. Thus, most cleanup methods require removal of topsoils on land and sediments in streams and impoundments. The volumes of contaminated soil or sediment can be enormous, and the material needs to be excavated and transported to a disposal location elsewhere. This process is not only extremely costly; it also damages the ecosystem that may be contaminated but is otherwise healthy, and it unavoidably leads to damage to the area designated for disposal of the material (see attached article: "Avoiding destructive remediation at DOE sites," *Science* 303: 1615–

1616 (March 2004)). There have been various DOE estimates of the total cost of such remediation activities, and most have been in the range of 100 to 500 billion dollars. As of about 2003, over $60 billion had been spent on remediation. In many cases, scientific risk assessments supporting the decision to remediate have been done poorly, and sometimes not done at all. Clearly, much of the soil remediation completed in the DOE complex has not actually reduced real health risks to real people. Instead, they have possibly reduced future risks to hypothetical people assumed to use the land in very unrealistic ways. Actually, the cleanup process itself produces risks to cleanup workers, and it has also caused spreading of otherwise stable contamination (*Science* 303: 1615–1616 (March 2004)).

I believe that the only objective and quantifiable way to determine the necessity of cleanup of contaminated areas is a rigorous, scientific assessment of the human health and ecological risks of proceeding with engineered cleanup, and comparing the results with the same risks of simply protecting and monitoring the area involved. It costs somewhat more to isolate and monitor a contaminated area than to just ignore it, but proceeding with aggressive, engineered soil removal escalates the costs by several orders of magnitude. The risks resulting from leaving contaminated soil or sediment in place generally increases in proportion to the level of contamination, so it is critical to carefully measure and document the levels of each identifiable contaminant in the area of concern as a first step in determining what action, if any, to take. The second action is to use science-based methods of assessing the human health and ecological risks from such documented levels of contamination. If the risks resulting from leaving contamination in place are sufficiently low, and if the costs of, and damage from, cleanup are sufficiently high, then it is difficult to justify action to remediate. The SREL is ideally poised to continue the science needed to make such decisions at the SRS. Just as importantly, SREL has the necessary credibility with the public and the regulatory agencies to have their findings trusted and used in the decision-making process.

It seems instructive at this point to summarize an actual case study at the SRS that involved choosing between alternative approaches to managing a contamination situation that required relatively urgent action. The case study involved Par Pond, a 2,600 acre impoundment that was used for about 30 years to cool hot water from the P and R military production reactors. The reactors were shut down permanently by 1988, so the reservoir was no longer needed for the purpose of cooling. In 1991, there were signs that the dam which created the reservoir was beginning to erode internally and starting to leak. As a safety precaution for people living downstream, the water level was lowered by about 20 feet, which exposed approximately 50 percent of the area of bottom sediments. The sediments in the reservoir had accumulated radioactive contamination during various periods of reactor operations, but most came from leaking fuel elements in R reactor in the late 1950s and early 1960s. The primary contaminant was cesium-137, a radionuclide with a 30 year half life that tends to be mobile in local ecosystems and which readily accumulates in plants, animals, and potentially in people.

This situation led to the need to examine alternatives for managing Par Pond and its lakebed. On the one hand, the levels of cesium-137 were sufficiently high to generate concern about protecting hypothetical people in the future who might use the area to grow crops, or people who might consume fish living in the reservoir. On the other hand, the 30 year stability and unexploited nature of the reservoir allowed the natural development of 30 shoreline miles of rich wetland/littoral vegetation, a diverse and productive fishery that attracted bald eagles and osprey, American alligators, turtles and other wildlife. It also attracted thousands of waterfowl that found sanctuary from hunters during the winter months. In essence, Par Pond had become a large fish and wildlife refuge of exceptional quality. It was often referred to as one of the "crown jewels" of the many different and exceptional ecosystems of the SRS. Clearly, remediation of the reservoir would destroy this entire ecosystem.

The Par Pond situation did not escape the attention of the regulatory agencies. The Environmental Protection Agency (EPA) declared the exposed lakebed a CERCLA or "Superfund" site, a designation which imposes a defined protocol for assessing all feasible alternatives for managing the site. The main alternative strategies that were developed and studied included:

1. Draining, breaching the dam, and converting the lakebed to forest or other vegetation cover,
2. Draining, breaching the dam, and excavating and removing the sediments,
3. Draining and attempting to fix the sediments in place, and
4. Repairing the dam and refilling the reservoir to cover the ^{137}Cs-contaminated sediments.

Option 1 initially looked feasible, and a generic, "paper" risk assessment by a non-SRS affiliated laboratory suggested acceptable risks for a hypothetical self-sufficient site resident who farmed the lakebed and subsisted on foods grown there. However, SREL research by scientists who made actual measurements on the lakebed contradicted the earlier study. Site-specific research showed the ^{137}Cs to be taken up by food crops to a much greater extent than did the generic "paper" risk assessment, leading to a hypothetical risk that could exceed the EPA-unacceptable threshold of 10–4 by a factor of about 30. The 10–4 threshold means a one chance in 10,000 of getting fatal cancer from the exposure to radiation. This meant that Option 1 was an unacceptable management strategy.

Option 3, fixing the ^{137}Cs in place was not considered feasible, due to unproven technologies for doing so, and very high costs. That left Options 2 and 4 for further consideration. Option 4, repairing the dam and refilling the reservoir initially looked unfavorable due to the cost, estimated at 10–15 million dollars. However, when Option 2, excavating and transporting the sediments elsewhere was examined, the cost estimate exceeded 4 billion dollars! Furthermore, Option 2 would have destroyed the Par Pond ecosystem and would have created serious water quality problems downstream due to erosion of sediments before the soil became stabilized with vegetation. At this point, Option 4 appeared to be the best solution, but then the question arose as to the effects of the ^{137}Cs radiation exposure to plants, animals, and hypothetical fishermen who might consume fish from the reservoir. Again, SREL research and assessment provided the answers. The radiation dose rates to plants and animals living in Par Pond would be well under the DOE protection guidelines (0.1 or 1.0 rad/day, depending on species), and the risk to the hypothetical fisherman consuming fish from the reservoir would also be under the EPA risk guideline of 10–4. Furthermore, decades of SREL research on the Par Pond biota showed no indication of radiation effects. On the contrary, the plants and animals living in the reservoir were diverse, robust and self-sustaining.

In the end, the decision was made to pursue Option 4, repairing the dam and refilling the reservoir. The dam repair and enhancement was completed at a cost of about 12 million dollars. The reservoir was refilled and the ecosystem was almost fully recovered within about five years. The cost to repair the dam was less than one percent of the cost of Option 2, engineered cleanup. The cost for the SREL research which supported Option 4 was approximately $200,000, or at least 800 times less than the cost of engineered sediment removal. A final way in which SREL contributed to this sensible decision was to provide tours of Par Pond for personnel affiliated with State and federal regulatory agencies. Actually seeing the ecosystem in person and talking with scientists having first-hand knowledge gave key people a far different impression than just reviewing piles of documents. I believe that this kind of success story can be repeated many times over in the future, leading to preservation of ecologically-valuable areas and saving large sums of money as well. However, a decision such as this requires detailed scientific information directly relevant to the problem, and the information needs to be generated by an independent, credible laboratory. SREL is that kind of laboratory.

In conclusion, I believe the following points are true and relevant to the current funding crisis for the SREL:

- The SRS is of great social, ecological, scientific and educational value. SREL should be funded to continue and even expand its role as an independent scientific organization that plays a key role in the long-term stewardship of the SRS.
- SREL research has saved the government far more money than it has received. The Par Pond example alone proves this notion.
- SREL research over the last 50 years has demonstrated time and again how nuclear activities can be compatible with a high degree of environmental quality.
- SREL's work is credible to other scientists, regulators and the general public because it is an independent scientific/academic organization with an excellent reputation for integrity, high-quality work, productivity and educational outreach activities.
- Some of the SREL research will be essential to the generation of public and political support for commercial nuclear power, which is expected to be a significant part of the solution to our over-dependence on foreign oil and global warming.
- In terms of cost per scientific publication, the SREL has been one of the most, if not the most, cost-efficient environmental research laboratory in the DOE complex.

- Largely as a result of SREL research, the SRS is probably the most well-characterized site in the DOE complex. This will continue to save time and resources in the planning process for new missions and providing required environmental regulatory documents, if SREL's "corporate knowledge" is retained through restored funding.
- SREL provides training unique to environmental problems of military and industrial sites. Students and visiting faculty from colleges in every state have come to SREL for hands-on experience. Few, if any, other sites in the DOE complex can offer this kind of training in a truly academic atmosphere.
- The funding needed to maintain the infrastructure of SREL is relatively trivial, while the costs of shutting it down are not.

I fully believe that shutting down the SREL is a serious mistake that is not in the national best interest. I sincerely hope that this is realized before it is too late, and that funding for the laboratory can be restored.

POLICY FORUM

ENVIRONMENT

Avoiding Destructive Remediation at DOE Sites

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(11–13). Ironically, it is largely because of this slight contamination that many areas have remained undisturbed and now support thriving ecosystems with no evidence of effects from radionuclides or chemicals.

An illustration of how cost reduction can be coordinated with environmental preservation is the decision to avoid aggressive cleanup of Par Pond, a 2500-acre impoundment that was formerly used to cool nuclear reactor effluents at the Savannah River Site (see the figure on page 1615). Owing to concerns about dam integrity, DOE drained some of the water to reduce the risk of dam failure. This action exposed about half the lake bed and cesium-contaminated sediments (mean activity ~10^3 Bq m^{-2}), triggering a risk evaluation under EPA's cleanup regulations. Because the reservoir was no longer needed for reactor operations, DOE considered permanently draining the reservoir. The low levels of ^{137}Cs did not pose a threat to biota (13–15), but on the basis of risk analyses for a hypothetical site resident that exceeded 10^{-4}, serious consideration was given to excavating the sediments and trucking them to another site for a cost of more than $4 billion (16). After analyzing alternative remediation strategies, DOE decided to repair the dam and refill the reservoir at a cost of about $12 million. This decision saved >99% of the cost of excavation. Furthermore, it preserved an ecosystem that includes about 35 lineal shoreline miles of wetland and littoral vegetation, an abundant and diverse warm-water fishery, alligators, bald eagles, osprey, and a large wintering waterfowl population (16, 17).

Another successful example is congressional legislation to convert most of the buffer zone at the Rocky Flats Environmental Technology Site near Denver, Colorado, into a wildlife refuge that is now managed by the U.S. Fish and Wildlife Service (18). The DOE, State of Colorado, and EPA reached agreement on cleanup standards for radionuclides in soil based on a wildlife refuge worker scenario rather than a hypothetical future site resident (19). For the agreed-upon level of risk (10^{-5} in this case), the soil action level would have been roughly an order of magnitude less for the site resident than for the refuge worker and would have significantly increased the acreage to be excavated. Although less than 6500 acres, the Rocky Flats site provides sanctuary for mule and white-tailed deer, coyotes, bald eagles, and the endangered Preble's jumping mouse in natural prairie habitat that is rapidly disappearing along Colorado's Front Range.

Additional benefits would result from a realistic land-use strategy involving continued federal control. For example, the safety and health risks to workers engaged in a cleanup effort can be far greater than the public health risks of no action (20). Furthermore, it is impossible for any cleanup of environmental contamination to be 100% complete and to achieve a zero risk. Undisturbed land stabilized by natural vegetation minimizes contaminant migration by reducing erosion (8) and water infiltration that mobilizes some contaminants into groundwater. Moreover, sustained federal management of certain DOE sites is critical for maintaining the security of high-level nuclear wastes. A terrorist attack on a high-level waste tank could potentially release dangerous levels of radioactivity. Isolation and patrol of buffer zones around such targets reduces the likelihood of attack, and preventing residential development in these areas maintains safe distances for the general population should any release occur.

Some may interpret this approach as simply an excuse to avoid more extensive cleanup. Further, those having financial interests in the cleanup process may resist the concept for fear of lost revenues (5). There is no question that many DOE sites and facilities will require cleanup and indefinite maintenance and surveillance. However, we believe cleanup decisions, whether in the United States or elsewhere, should be based on scientifically rigorous risk assessments for realistic land-use assumptions that will protect public health, cut costs dramatically, and spare valuable natural ecosystems from needless damage.

A new DOE policy calling for cleanups to be based on risk-based end states (RBES) represents a major shift from past practice (21). It seems that the intention of this policy is, with ultimate agreement between DOE, regulators and other stakeholders on future land use, to achieve long-term protection of public health and ecosystems. Total risks associated with both contamination and cleanup processes are being considered in view of the most appropriate land use, and with a desire to avoid "collateral ecological damage" where possible (22), and a land-use type that includes ecology and preservation (23). Although only recently implemented, this policy has already highlighted the importance of scientifically sound risk assessments based on realistic land uses. However, we are aware of no specific protocol or set of criteria to identify and promote the preservation of ecologically valuable, but slightly contaminated, sites. Decisions should not be made by individual DOE facilities without nationwide guidance. If the criteria of size, ecological value, current risk associated with land use, and projected risk reduction through natural attenuation were established, this policy could be more uniformly administered. If these concepts can be implemented through the RBES policy, success will be measured by ecosystems preserved, worker harm avoided, and the billions of dollars saved.

References and Notes

1. This contamination includes chemical and radioactive materials that escaped containment and that reside in ~[illegible] m³ soil and ~[illegible] liters of groundwater. Chemical contaminants include fuel, other organic compounds, explosives, and metals. Radioactive contaminants include fission products such as ^{137}Cs, ^{90}Sr, and ^{99}Tc and actinides, e.g., ^{239}Pu and uranium isotopes (24). Radioactive contamination concentrated to more than 100 times the background levels is usually confined to relatively small areas at or near industrial sites (each probably <[illegible] ha); lower levels of contamination can be spread over much larger areas, some of which include natural aquatic and terrestrial ecosystems.
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BIOGRAPHY FOR F. WARD WHICKER

Dr. Whicker has been a member of the CSU faculty since 1965 and, from 1998–2002, Head of the Department of Radiological Health Sciences. He played the key role in the development of the internationally-recognized graduate program in Radioecology, and is widely regarded as one of the founders of this field, which addresses the fate and effects of radioactivity in the environment. His formal teaching extends beyond CSU to numerous organizations, including the International Atomic Energy Agency, the International Union of Radioecologists, and the U.S. Environmental Protection Agency. In 1989 he established the Par Pond Radioecology Laboratory at the Savannah River Site. His over 170 scientific publications include 98 in peer-reviewed journals, 33 book chapters and five books. His awards include the "E.O. Lawrence Award" from the Department of Energy (1990), the "Distinguished Scientific Achievement Award" from the Health Physics Society (2004), and the "V.I. Vernadsky Award" from the International Union of Radioecology (2005). His research on the effects of ionizing radiation on plants and animals has contributed to the development of national and international standards and guidelines for protecting the general environment from radioactive contamination. Dr. Whicker has served on many committees and advisory panels at national and international levels. These include the Board of Directors, Scientific Vice President, Honorary Council Member, and Member or Chair of several committees of the National Council on Radiation Protection and Measurements. He has served on Committees of the National Academy of Science/National Research Council in the area of environmental problems of the DOE Weapons Complex. He has chaired national and international working groups and scientific writing teams, for example, for the International Atomic Energy Agency, the International Commission on Radiation Units and Measurements, and the National Council on Radiation Protection and Measurements. He has served on review panels for many organizations, including the Environmental Protection Agency, the U.S. Congressional Office of Technology Assessment, Los Alamos National Laboratory, the National Cancer Institute, the Centers for Disease Control and Prevention, the States of Colorado and Maine, the Office of Naval Research, Sandia National Laboratory, Battelle-Pacific Northwest Laboratory, and the Southwest Research Institute. He has consulted for many private organizations and has served as an expert witness on numerous litigation issues concerning radioactivity in the environment. He served four years as Associate Editor for the Americas for the *Journal of Environmental Radioactivity.*

DISCUSSION

Chairman MILLER. Thank you. At this point we will open our first round of questions, and the Chair recognizes himself for five minutes.

PRIVATE CONTRACTORS VS. SREL

First, Dr. Whicker, your example of remediation at Par Pond, could a contractor have provided similar information to support the option of remediation in place as opposed to excavation?

Dr. WHICKER. They could not have come in and done the job very quickly. One of the key things was that the observation of fish and wildlife in that reservoir had been going on for decades, and the radioactivity had been there for decades. It was gradually decaying. If there were going to be effects, it probably would have occurred 30 or 40 years ago. So, no, I don't think a private contractor could come in and do the job properly.

There was a risk assessment done by a private contractor on what the risks would be of farming the lake bed and someone living on the lake bed. They are the ones that came up doing a paper study with the notion that, yeah, it would be safe to farm out there, but they didn't take any data, they didn't really factor in the increased mobility of cesium-137 in that particular kind of soil.

So, and I was told that that research cost about $1 million. It was done very quickly and on paper. They never came to the site to look at it.

NATIONAL ENVIRONMENTAL RESEARCH PARKS

Chairman MILLER. SREL is one of seven National Environmental Research Parks associated with DOE installations in different parts of the country, different ecological zones. What is the value of having research in each ecological zone? Is it important that there be a network of sites to allow kind of a regional understanding of ecological issues?

Dr. WHICKER. Yes, it is. Each of the DOE sites, the major sites, have different kinds of soil and the type of soil determines the mobility of radio-nuclides and contaminants in that soil, including how much is taken up into the food chain and thereby how much risk will there be to someone living on that side. So, yeah, it is important to do these kinds of studies at all the major sites. They all differ quite a bit in terms of their ecology and their geochemistry.

THE VALUE OF LONG-TERM ECOLOGICAL RESEARCH

Chairman MILLER. What is the importance of longer-term data for reptiles, birds, amphibians in deciding which is, deciding on a credible risk assessment for different remediation options, excavation versus remediation in place?

Dr. WHICKER. Well, the long-term aspect is important. It is, you know, you can go out on the field and observe things in the field of ecology, but figuring out what is causing what is very, very difficult. Let us say you see a decline in a particular wildlife species, and you say, well, gee, is it because there is a little bit of, there is cesium-137 out there, or is it a natural cycle? Is it due to some other factor that we are not even aware of?

Ecology is a science that has to be very innovative to try to figure out what causes what. You can observe things, but understanding the causes takes years, if not decades, of observation.

Chairman MILLER. To set an example to other Members of the Committee I will now yield to Mr. Lampson for his first round of questions.

Chairman LAMPSON. Thank you, Mr. Chairman. Let me start with Dr. Whicker, and I have a question or two.

Radio-nuclides like cesium-137 and plutonium-239 are tainted in the environment for a long time, and although they attach to soil particles, they do move in the environment and sometimes are detected offsite. Now, I understand that the monitoring of animals and plants helps us to understand those paths. If these substances moved through the food chain, is it possible that larger, longer-lived animals carry this contamination offsite? And so is monitoring of birds, mammals, fish, and reptiles important from the perspective of insuring the safety and human health of people in surrounding communities?

Dr. WHICKER. It is true that animals such as birds and fish do pick up contamination, and yes, indeed, they can migrate off site. Studies have been done at Savannah River Ecology Lab and at other sites, and they generally show that just a very tiny amount of radioactive or chemical materials actually get moved off site by immigration of individuals from the side.

Clearly observing these pathways of contaminant transport in animals and so forth does tell us a lot about what humans might be exposed to, and a lot of the work that has been done there has even been done in the context of agriculture. It isn't just pure ecology that we are concerned about. It is agriculture ecosystems, and we can learn about, a lot about that from the kind of work that has gone on at the Savannah River Site.

We planted crops that people eat right on the Par Pond lakebed, for instance, and we looked at the uptake of cesium and other radio-nuclides into corn and okra and turnips and lettuce and so on, and that would be something that a self-sufficient farmer who might occupy that land in the future would be exposed to.

Chairman LAMPSON. Would both of you comment on this question. Can natural attenuation be used safely as a remediation option if it is not coupled with a credible long-term monitoring program?

Dr. SCHNOOR. By definition monitored natural attenuation includes long-term monitoring and modeling to make sure that the contaminants aren't migrating off site or posting an undue risk to humans or to animals. So, no, it cannot be done without long-term monitoring.

Dr. WHICKER. And I might add that the idea of monitored natural attenuation is a very effective one. The wisdom of putting these DOE sites in large areas where there is a buffer zone has really resulted in extremely small amounts of contamination ever getting off site. That is not to say that none does, but the levels that do get off site are extremely small because they do get tied up in the sediments, they are taken up in the biota. Actually, I can tell you that the presence of the Savannah River Site actually helps to improve both water quality and air quality for that whole region, as opposed to the idea if that whole area were say agricultural. The streams coming off the Savannah River Site are largely black water streams. They are clear. They are generally devoid of contaminants, where if you look at the streams coming into the river from the other side where they are coming off farmland is usually muddy, and that is usually loaded with pesticides and that kind of thing.

So I think the site engenders a high degree of environmental quality that extends well beyond the borders of the plant.

Chairman LAMPSON. Mr. Chairman, instead of carrying over, my next question will be longer than five minutes, so I will yield out my time at this point.

Chairman MILLER. Thank you, Mr. Lampson. Mr. Sensenbrenner for five minutes.

NATIONAL LABORATORIES' OVERHEAD COSTS

Mr. SENSENBRENNER. Yeah. Thank you very much, Mr. Chairman.

Both of you, do you believe as a general rule that research funds should be parceled out on a competitive peer review basis or by Congressional or Executive Branch earmarks?

Dr. WHICKER. I am not sure I quite understand your point. If I understand it a little bit, the work that the Savannah River Ecology Lab does is submitted to peer review journals and so forth, has to go through peer review before it can be published. However, it is not subject as far as I know to any kind of censorship from the Department of Energy.

Mr. SENSENBRENNER. I am talking about the grants to do the research that result in the publication.

Dr. WHICKER. Well, yeah. The grants that they get, they have to compete for grants. When they go after funding that would be from now DOE sources or non site, you know. It would be over and above their normal.

Mr. SENSENBRENNER. Dr. Schnoor.

Dr. SCHNOOR. I agree that funding should be competitive, however, in the case of the Savannah River Ecology Laboratory, a certain base level of funding I think is necessary to keep the operation going and to insure and maintain the long-term research.

Mr. SENSENBRENNER. Yeah. I guess, you know, I guess the observation that I would make or make two observations, you know. One is is that neither Colorado State University nor the University of Iowa, or for that matter the University of Wisconsin, Madison, is able to get a specific line item from the DOE for things that should be competitively peer reviewed. You know, they ache to basically have their projects compete against everybody else's, and if they end up losing out, then those scientists are not funded by the Federal Government, and it is up to, in the case of each of these three institutions that I mentioned or for that matter, the University of Georgia, to determine whether or not to use their own funds to get from the legislature to continue that base.

And I guess my question is is why should SREL be treated differently in terms of competitive peer review funding for this type of research than most of the other institutions in the country when they compete for scientific research grants?

Dr. SCHNOOR. The Savannah River Ecology Lab, their research is peer reviewed, and my testimony——

Mr. SENSENBRENNER. No. I am talking about, you know, this is after the research is done. I am talking about——

Dr. SCHNOOR. About the award.

Mr. SENSENBRENNER.—the award, because, you know, with you at the University of Iowa, you don't get the award. You don't do the research unless you get the state legislature to decide to fund it. Now, why shouldn't the same hold true with research that is done at SREL, where if they don't get the award, then it is up to the Georgia legislature to determine whether or not to continue the funding?

Dr. SCHNOOR. A certain amount of funding is necessary at these laboratories just to keep the doors open and to keep a base-level research going.

Mr. SENSENBRENNER. Uh-huh.

Dr. SCHNOOR. Then they should compete and do compete for other outside funds.

Mr. SENSENBRENNER. Well, I guess neither of you get my point, and I am trying to see why SREL ought to be dealt with differently in terms of funding for the basic research than practically every other institution in the country, whether it is a state university or whether it is a private university. Everybody else rolls the dice, well, with competitive peer review grants, and they have got to do it year after year after year. And if they don't win the competitive peer review grants, then they either go to the legislature or fold up shop. What is different about SREL?

Dr. SCHNOOR. I am trying to answer your question, and that is that at research laboratories and SREL is no different than other EPA or DOE laboratories, you need a base level of funding to keep the——

Mr. SENSENBRENNER. Uh-huh.

Dr. SCHNOOR.—infrastructure, the research operation going. And that is really what we are talking about here, and a rather, in my opinion, a small amount of funding also. Ten million dollars is really quite small considering the quality and level of research that is going on at SREL.

Mr. SENSENBRENNER. But why should SREL get a line item and the University of Iowa doesn't?

Dr. SCHNOOR. Well, the SREL gets a line item just like all the other National Research Laboratories.

Mr. SENSENBRENNER. Well, I am saying but why should they, because a peer review committee might decide that research that is done not at a National Research Laboratory has a higher priority for funding than SREL.

Dr. SCHNOOR. I understand your question, and, of course, at the University of Iowa we would love to have a line item funding also, but we are not a National Laboratory located in one of these——

Mr. SENSENBRENNER. But, Dr. Schnoor, my time is up. You know, my point is turning the coin over, you know, and that is that I know you would like to have, you know, a line item of funding, but why should SREL's line item of funding take away the potential of you getting more because your peer review research proposal is determined to be better by the committee?

I yield back.

Chairman MILLER. Mr. Bartlett for five minutes.

Mr. BARTLETT. Thank you very much. Is it your understanding that generally speaking in the community at large and the scientific community and in the medical community that the lower the level of radiation the better?

Dr. WHICKER. Yes. The lower the better.

Mr. BARTLETT. Do you agree, Dr. Schnoor?

Dr. SCHNOOR. Yes. There is a, in certain types of health outcomes, health effects, it is still thought that even a single bit of radiation could be enough to begin the disease process.

Mr. BARTLETT. Are you familiar with Hansey Selea? That name mean anything to either one of you?

Dr. WHICKER. Could you pronounce it again?

Mr. BARTLETT. Hansey Selea. H-a-n-s-e-y.

Dr. WHICKER. No. I am sorry.

RADIATION HORMESIS

Mr. BARTLETT. Hansey Selea was a, one of the early investigators from Montreal, Canada, I believe, in stress. I am 81 years old, so my work in the scientific community is 50 years old and more, so he is back in history. But he was the first investigator to begin to understand the role of stress in the body. I wish I had come prepared with the actual data, but there is scientific evidence that appropriate levels of radiation are beneficial. Because what they do like any other stressor out there, they challenge the body's defenses, and these defenses are martialed so that we are then better able to withstand other stresses.

I know that your perception is the perception of the general community and it should not be the perception I think of the scientific community, particularly the medical community. You know, radiation is just another stressor. As far as I know there is nothing unique about that, and I think that we are spending excessive amounts of money in cleanup, which with a hard look is really silly. It is just another stressor. Water is a great absorber. Your observation that refilling the impoundment was the right thing to do. It doesn't take much water to absorb this radiation, and the organisms living near it are probably better off for the moderate levels, the appropriate levels of radiation they are getting because their residence is built up, the body's defenses work that way.

What do we have to do so that we change this perception that the less the better? I don't believe that radiation is a unique stressor. I don't think the scientific evidence indicates it is a unique stressor, and we just are straining that and spending all sorts of money we don't need to spend in cleaning up the last vestiges of this contamination.

All of the ground in these cleanup areas don't have to be appropriate for establishing a daycare center where the kids may sit and put dirt in their mouth.

That is the rules that we adhere to, and I think that we are spending at least an order of magnitude, too much money in cleaning up these sites, because we don't understand the science and physiology and the medicine.

Dr. WHICKER. Well, I agree with you, and in fact, my written testimony has an article published in Science that says basically what you are saying. The thing of it is is that it takes a lot of science to demonstrate what you are talking about and oftentimes to convince the regulatory community and the public that cleanup may not always be warranted because the damage can be great, the cost can be high.

The notion of a little bit of radiation being good for you, that is a well-known phenomenon called hormesis, and that has received a great deal of attention over the years. Of course, we live in a radiation environment. We are sitting here right now, and we are getting a fair amount of radiation just because our environment, cosmic radiation, radioactivity in the earth's surface that has been there since the earth was formed. And so but the way that I answered your original question of, is that for the purposes of radiation protection, they assume that the dose and response to that dose is a linear phenomenon, but there is evidence—the trouble is there is not consensus on that, and getting the data to pin it down at the very low doses is very difficult.

Mr. BARTLETT. Yeah. I don't know of any evidence that says that this is not true. Thank you very much.

My time is up, Mr. Chairman. Thank you.

Chairman MILLER. Thank you, Mr. Bartlett.

I will now recognize myself for an additional five minutes for a second round of questioning.

Mr. Sensenbrenner's questions regarding peer review I think foreshadows the testimony on August 1. Both of you are involved in scientific research and are familiar with what is involved, what is required typically of peer review. Is that correct?

Dr. SCHNOOR. Yes.

Dr. WHICKER. Yes.

COMPETITIVE GRANTS AND PEER REVIEW

Chairman MILLER. My impression of peer review for a grant is that the grant application is very thorough in the information called for, in the information that the applicant must provide. Is that correct?

Dr. SCHNOOR. Yes.

Dr. WHICKER. Yes.

Chairman MILLER. Okay.

Dr. SCHNOOR. I might add, Chairman Miller, that there are grants that are competitive, and there are grants that are part of a mission agency.

Chairman MILLER. Right.

Dr. SCHNOOR. And I think that——

Chairman MILLER. With respect to peer review.

Dr. SCHNOOR.—you need both kinds——

Chairman MILLER. To make a judgment by, to allow a judgment by others expert in the same field. Would it typically be the case that the information requested would be very thorough and would be the information needed to review?

Dr. WHICKER. Yes.

Dr. SCHNOOR. Yes.

Chairman MILLER. Okay. If Dr. Bertsch testifies on August 1 that the information required of him was a sentence or two description of the work they plan to do, does that sound to you like the information usually required for a scientific or technical peer review?

Dr. SCHNOOR. No.

Chairman MILLER. Okay. And a second question about peer review. With respect to peer review, what kinds of documents does it generate? Are there memoranda describing the failings of the proposal if peer review is critical? What, are there documents typically generated as a result of peer review?

Dr. WHICKER. Are you talking about in applying for a research money or——

Chairman MILLER. Well, in making the decision.

Dr. WHICKER.—when it comes to publishing?

Chairman MILLER. Whoever makes the decision with respect to peer review, are there not generally documents generated as a result of peer review?

Dr. WHICKER. I think——

Chairman MILLER. Memoranda, letters, something that would say what exactly the reviewer was looking for or if the reviewer found something wanting, exactly what was wanting.

Dr. WHICKER. Sometimes the person who submits the grant proposal will hear about those things, and they will get some communication back, but not always in my experience. Sometimes you just find out that you don't get funded, but you never hear about why.

Dr. SCHNOOR. Well, normally I would say you, as one who proposes for research funding, you do receive letters of review back from panels who have looked at your research, and those remain anonymous. You don't find out what they were.

Chairman MILLER. Okay.

Dr. SCHNOOR. But you do get to see——

Chairman MILLER. Well, that is what you see as having applied for a grant——

Dr. SCHNOOR. That is correct.

Chairman MILLER.—subject to peer review, but internally, whether you see it or not, would you expect there to be some document of some kind that sets forth what the failings were that led to the denial of funding?

Dr. SCHNOOR. Yes. That would be my belief.

Chairman MILLER. Okay.

Dr. SCHNOOR. Yes.

Dr. WHICKER. I would think so as well.

Chairman MILLER. And if the Department of Energy has no documents that really reflect a peer review, an analysis of the work done at the Savannah River, the SREL, Ecology Lab, then perhaps there was not a genuine peer review. Is that——

Dr. WHICKER. I would hate to speculate.

Dr. SCHNOOR. I couldn't speak for the Department of Energy. I can say that there are, papers from the Savannah River Ecology Lab have been peer reviewed, their technical scientific papers.

ENVIRONMENTAL REMEDIATION RESEARCH DONE BY SREL

Chairman MILLER. All right. Dr. Schnoor, we still have Superfund sites we are still cleaning up. The sites were on federal and private lands throughout the country. Are the studies that have been done at SREL applicable to remediation of environmental damage and other areas?

Dr. SCHNOOR. Yes. I think my testimony shows that most of the papers, especially recently, are related to the problems at the Savannah River Site. But certainly these problems are shared by many other sites, and the research is applicable broadly.

Chairman MILLER. What is the status of our developing the technologies to cleanup safely environmentally-contaminated sites, particularly DOE sites, particularly radiation sites with the contaminous radiation?

Dr. SCHNOOR. Especially where you have mixed wastes, that is both radio-contaminants as well as other contaminants together. These are considered to be among the more difficult sites to clean up, and proportionately more of those remain than other sites.

Chairman MILLER. All right. How would you evaluate SREL as a candidate for undertaking further research into remediation as a technique for cleanup? Based upon your experience with that lab?

Dr. SCHNOOR. I think this lab is performing extremely well considering the rather small number of faculty involved in research there and the small federal funds and state funds committed to it.

FATE AND TRANSPORT STUDIES

Chairman MILLER. All right. I think we throw around terms like all of us know what they mean on this hearing. I think in hearings like this where members are not willing to betray their general ignorance of the signs, but what are fate and transport studies?

Dr. WHICKER. Am I part of the questioning here?

Chairman MILLER. Yes. Either one of you. Yes, sir. Dr. Whicker

Dr. WHICKER. Fate deals with where contaminants go once they are released, usually either to air or water. In other words, let us say you put a contaminant into water. It is, some contaminants will stay in the water but most of them will stick to soil particles, silt particles, phytoplankton, little organisms in the water. Then they might move through the food chain or they might not, depending on their chemistry. So that is what we mean by fate, what happens to it, where does it go.

Chairman MILLER. And transport. Is that different or is that part of fate?

Dr. WHICKER. It is the same thing basically.

Dr. SCHNOOR. Transport is sort of where it goes——

Dr. WHICKER. Yeah.

Dr. SCHNOOR.—and fate is sort of what happens to it along the way.

Dr. WHICKER. Yes.

Chairman MILLER. Okay. A knowledge of where contaminants go and what happens to it, is that important beyond cleaning up on site. Would that be important, for instance, in any kind of activity at a contaminated site that disturbs the soil, construction activity, for instance?

Dr. WHICKER. Oh, yes. It is extremely important, and in fact, there are cleanups that have been done in the DOE complex that the cleanup itself generated dust and that dust blew offsite, and that led to a multi-billion dollar lawsuit. This was at Rocky Flats.

Chairman MILLER. I think that is all the questions that I have and since that is all the questions I have, that is all the questions that any Member has. But thank you for being here today. We will have a second panel on August 1. Dr. Bertsch, this will be your second trip to Washington. I understand that you have time on your hands now, but I appreciate and apologize for your coming today without testifying. We will try to accommodate your schedule on August 1. I will let you testify first and get on with your day.

With respect to the Department of Energy witnesses, I strongly urge all the witnesses not to make lunch plans, not to make dinner plans. We will continue until we have completed the testimony scheduled for August 1.

The best predictor of what a hearing, an Investigations and Oversight hearing will be like, how searching the questioning will be, how thorough it will be, is how motivated the Members are and the staff is. I think you should assume that the staff and the Members will be very motivated on August 1.

With no further business, we are adjourned.

[Whereupon, at 11:50 a.m., the Subcommittees were adjourned.]

THE DEPARTMENT OF ENERGY'S SUPPORT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL), PART II

WEDNESDAY, AUGUST 1, 2007

House of Representatives,
Subcommittee on Investigations and Oversight,
Subcommittee on Energy and Environment,
Committee on Science and Technology,
Washington, DC.

The Subcommittees met, pursuant to call, at 10:17 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Brad Miller [Chairman of the Subcommittee on Investigations and Oversight] presiding.

BART GORDON, TENNESSEE
CHAIRMAN

RALPH M. HALL, TEXAS
RANKING MEMBER

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THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
AND
THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

JOINT HEARING ON

THE DEPARTMENT OF ENERGY'S SUPPORT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL), PART II

August 1, 2007
10:00 a.m.
2318 Rayburn House Office Building

WITNESS LIST:

Panel I

Mr. Clay Sell
Deputy Secretary of Energy. U.S. Department of Energy

Panel II

Dr. Paul Bertsch
Former Director, Savannah River Ecology Laboratory, the University of Georgia

Ms. Karen Patterson
Chair, Savannah River Citizens Advisory Board

Panel III

Mr. Jeffrey Allison
Manager, Savannah River Site, U.S. Department of Energy

Ms. Yvette Colazzo
Assistant Manager for Closure Project, Savannah River Operations Office, U.S. Department of Energy

Mr. Paul Gilbertson
Deputy Assistant Secretary for Engineering and Technology, Office of Environmental Management, U.S. Department of Energy

Mr. Charlie Anderson
Principal Deputy Assistant Secretary, Office of Environmental Management, U.S. Department of Energy

JOINT HEARING CHARTER

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
and the
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

The Department of Energy's Support for the Savannah River Ecology Laboratory (SREL), Part II

WEDNESDAY, AUGUST 1, 2007
10:00 A.M.–12:00 P.M.
2318 RAYBURN HOUSE OFFICE BUILDING

Purpose:

The purpose of the hearing is to examine the events leading to the Department of Energy's decision to withdraw funding for the Savannah River Ecology Laboratory (SREL) in fiscal year 2007.

Background:

SREL was established in 1951 to track the ecological changes and environmental consequences of establishing nuclear weapons production facilities on the Savannah River Site (SRS). It is unique within the DOE complex because it is the only lab that is not "owned" by DOE. Rather, the University of Georgia founded the lab and has always had a relationship with DOE that has allowed them to be present on the site and funded by the Department (and the Atomic Energy Commission before DOE was established).

SREL has been a very productive scientific lab with a distinguished record of publication and an amazing amount of unbroken data sets on the ecology of the site. While the site itself was a center for weapons production and contains enormous amounts of waste, with ongoing waste processing that will stretch out for a generation or longer, it is also an enormous physical site-much of which includes pristine environmental conditions. Largely untouched by development, the Savannah River Site hosts the most diverse and complex ecology in North America and contains all representative ecosystems of the southeastern U.S.

Recognizing these unique features of the site, in 1972 the Atomic Energy Commission created the first National Environmental Research Park (NERP) located within the DOE complex at Savannah River. There are seven NERPs located at DOE sites around the country. SRS has 30 set-aside areas where no development of any kind is allowed to go forward. SREL has monitored the ecology in these set-asides ever since they were established. Another facet of the SREL work in the NERP is that they are a major way that the Savannah River Site carries out its long-term stewardship responsibilities—to demonstrate care for the site in a manner that satisfies their requirements under the *National Environmental Policy Act* (NEPA) and other federal land management laws and to demonstrate DOE is managing contaminated areas of the site in a manner that does not put public health and the adjoining off-site environment at risk.

NEPA established environmental protection as a mission of all federal agencies. SREL has carried out this function through very successful public education programs to bring the public and students to the site and show them the unique qualities of the ecology there.

SREL also collects data that is used by the site to demonstrate its compliance with a number of environmental laws. IF SREL does not provide these data as part of their base work, the site will have to hire a contractor to collect that information. The communities that border the site in Georgia and South Carolina and that are located downstream from the site also rely on the lab to be a trusted, independent voice that will tell them the truth about the nuclear wastes on the site, the remediation activities on the site, and the safety of being near or downstream from it.

DOE Funding and Cooperative Agreement with SREL and UGA:

The Bush Administration's budget requests for SREL have varied considerably, but with a general downward trend since FY 2002. The first budget they composed, for FY 2002, included a 30 percent cut in the request for the lab by Environmental Management (EM). Then in FY 2003 through FY 2005, the lab was funded through the Office of Science accounts at a level of around $8 million. In FY 2006, the Administration's budget request eliminated all funding for the lab. The Georgia and South Carolina delegations secured funds in the FY 2006 appropriation to reverse this decision.

These delegations met with DOE and an agreement was made that the Administration would fund the lab at $4 million in FY 2006 with $1 million coming from the Office of Science and $3 million coming from EM. It is with that deal that the path to closing the lab begins and the understanding of the different parties involved about the future funding arrangement for SREL diverges. The description of events that follows is largely based on the documentary record provided the Subcommittees by the Department of Energy, SREL and the University of Georgia.

Negotiations Begin on a New Cooperative Agreement—May 2005:

In May 2005, the Department hosted a meeting involving then-Assistant Secretary for Congressional and Intergovernmental Affairs, Jill Sigal, and other DOE staff, representatives from the University of Georgia and SREL, and representatives from the Georgia and South Carolina Congressional delegations. The Department did not want to face an ongoing string of appropriations earmarks and the delegations wanted some agreement that the lab would be supported. That meeting led to an agreement that in FY 2006 the Department would provide $4 million (plus some money from the National Nuclear Security Administration—NNSA) and in FY 2007 it would provide at least $1 million from EM accounts. SREL and UGA's existing Cooperative Agreement was to expire in July, 2006.

One of the points of disagreement among the parties is about whether $1 million was a cap or a floor, but there was ample discussion at that meeting about the perceived need for the SRS to use SREL to further their mission. Director Bertsch said that as long as he could pursue money from the programs on the site in addition to the base EM funding of $1–$2M, he would be able to keep the lab going.

Ms. Sigal requested that Dr. Bertsch put together a plan to show how he would do that, and so the day after the meeting, Dr. Bertsch forwarded a business plan that included the work SREL would undertake that was needed by the site. He was never told the plan was unacceptable.

In fact, a subsequent memorandum from the Principal Deputy for Environmental Management, Charlie Anderson, directed the SRS Manager, Jeff Allison, to negotiate a new five-year Cooperative Agreement with SREL–UGA. Mr. Anderson's memo drew extensively from Dr. Bertsch's business plan. The memo did not include direction to Mr. Allison on a specific funding level for SREL in FY 2007 or beyond.

Although DOE claims the terms of the deal struck in the May 2005 meeting were well-known to all parties, there is no evidence of this clarity in the documentation provided by DOE or indicated by the subsequent actions of Mr. Allison and Dr. Bertsch. For example, a May 2005 briefing memo prepared for the Secretary contains no information about two key elements of the deal:

1) The requirement for Headquarters review and approval of all funds for projects negotiated between SREL and SRS even if the funds were drawn from the discretionary funds available to the SRS Manager for site-specific activities; and
2) SREL would seek all funds above the $1M provided by EM base funding from non-DOE sources and become completely self-sustaining with no guaranteed funding from FY 2008 forward.

With no direction from Headquarters other than to begin negotiations on a new Cooperative Agreement, the Manager of the SRS, Jeff Allison, informs Dr. Bertsch that he has been directed to negotiate a new agreement and Dr. Bertsch and Mr. Allison proceed to work toward that end for over a year.

In March of 2006, even as negotiations continue, Mr. Allison tells Dr. Bertsch to budget for $4 million at SREL from SRS/EM in the FY 2007 budget, and documents this guidance in a letter to Dr. Bertsch. Similar budget information had also been conveyed to the University of Georgia in a letter from the SRS contracting officer in February 2006. Also, according to SRS documents, the site included $4.1 million for SREL in their budget request for FY 2007. The site's budget request had gone to Headquarters as part of the normal budget review process. No objections were raised by Headquarters at the time. A similar budget was subsequently being put together with similar funding levels for SREL by the site in October 2006 for inclusion in the FY 2008 budget.

When SRS and SREL–UGA conclude the negotiations on a new Cooperative Agreement, it provides for $4 million a year from FY 2007 through FY 2011 with a 2.5 percent escalator to allow for inflation. The agreement is sent up to DOE Headquarters for notification in August of 2006 and then again (due to an imperfection in the process) in September 2006. If Headquarters had approved it, Mr. Allison would have been authorized to sign the agreement. However, the agreement was never approved at Headquarters.

The Cooperative Agreement is Not Approved and Negotiations Begin Again—September 2006

Instead of concluding the year-long negotiation and establishing the new Cooperative Agreement, negotiations are re-opened with new criteria for the Cooperative Agreement.

It appears the agreement came to the attention of Charlie Anderson, who began to ask questions about the nature of the agreement, and Ms. Sigal who was adamant the agreement did not reflect the Secretary's direction. By early October, headquarters learns of the March 2006 letter from Mr. Allison to Dr. Bertsch directing him to build a budget for SREL around a funding level of $4M in FY 2007, Secretary Bodman becomes involved and directed that Mr. Allison come to Washington to meet with Deputy Secretary Clay Sell to explain what had happened.

On October 16, 2006, Mr. Sell, Mr. Anderson, James Rispoli (head of Environmental Management), Dave Garman and Mr. Allison met in the Deputy Secretary's office.

According to Mr. Allison, he explained that he had never been told that the Department wanted to change the way it had historically funded the lab (i.e., lump sum payment for continuity of services), and that he negotiated an agreement that ensured SREL would be able to conduct research needed by the site as well as engage in public education and stewardship matters that were important to the site.

It is still unclear why Mr. Allison was provided no direction prior to engaging in the negotiations with SREL–UGA. DOE maintains that Dr. Bertsch knew the terms of the deal, however, there is no documentation to support that claim and DOE made no objections or comments in response to the business plan (outlining funding by DOE of about $4M in FY 2007) that Dr. Bertsch supplied prior to the start of the negotiations.

Following the meeting with Mr. Allison, Deputy Secretary Clay Sell determined—supposedly with the approval of the Secretary—that the new agreement would provide $1 million of guaranteed funding in FY 2007 plus additional funding on a task-by-task basis.

According to the e-mail sent out by Mr. Rispoli to record this guidance, Mr. Sell indicated that DOE was to "compete" the rest of our FY 2007 needs to SREL (over the $1 million base), to insure that we will get what we want at a fair and reasonable price. The needs can include what was presented today."

Among the "needs presented" at the meeting with Mr. Allison were education and outreach activities and long-term site stewardship activities. This part of the guidance from the Deputy Secretary is contradicted by subsequent actions of Headquarters and site personnel.

The initial reaction from SREL was that this offer would lead to the closure of the lab, but the SRS Manager, Mr. Allison, assured SREL their work was needed by the site and he would fund their tasks using funds the site Director has discretion to award for site-based projects. DOE Headquarters was aware of the assurance provided by Mr. Allison to SREL because Mr. Allison had forwarded that e-mail to Headquarters and it included Mr. Rispoli, Mr. Anderson, Mr. Gilbertson, and was subsequently forwarded to Jill Sigal by Mr. Rispoli.

SREL–UGA then enters into negotiations once again to secure a new Cooperative Agreement. From September 2006 through November 2006, Dr. Bertsch was working with SRS assistant managers to identify projects the site would fund to meet $3 million in identified needs. It is during this time period when the Citizens Advisory Board for the SRS submits a Recommendation (#240) to DOE that SREL be funded "at a minimum of $4.5M in the future" after several years of concern about the funding of the lab.

At the same time, DOE Headquarters officials were editing the language of the Cooperative Agreement. Headquarters was insisting on highlighting language that emphasized funds were subject to "need, merit and availability of funds." They also included a provision that any funds could be subject to a "technical peer review." Dr. Bertsch believed this would be the kind of review his programs had been through many times in the past—where evaluators look at the sweep, mix and quality of science being done by the lab. However, DOE had something else in mind that was not made clear to the lab until months after the agreement was signed on December 1, 2006.

New Funding Criteria are Established by Headquarters and Funding Is Denied—February 2007

In December 2006, Dr. Bertsch and SREL believed they had a new cooperative agreement that made them financially stable because of the SRS Manager's repeated assurances that site needed the work SREL could provide and he had the money to fund it—his budget for FY 2007 had $4.1 million identified for SREL.

Then, in a January 29, 2007 memorandum, Mark Gilbertson, Mr. Anderson's Deputy for Technology at EM, writes to Mr. Allison to tell him that Headquarters is going to be conducting oversight of Savannah River's implementation of the Cooperative Agreement. The memo also indicates that Headquarters will conduct a peer review for the scientific merit of the SREL proposals and then the site will be asked to review them for their "relevancy."

No official can provide an example of a memorandum or direction of this nature to a site Manager from Headquarters issued before on any matter. The only similar example offered was by Mr. Anderson who said that when he worked at Savannah River, the site received a letter from Headquarters stripping them of their authority to negotiate with the State of South Carolina regarding clean-up matters.

The difference between this example and the SREL memo is that the memo from Mr. Gilbertson involves the oversight by Headquarters of $3 million in proposals from a University laboratory and Mr. Anderson's example involved negotiations regarding the Department's liability for billions of dollars in clean up and environmental compliance with a State government.

On February 20, 2007, Mark Gilbertson participated in a conference call with several SRS staff. The lead for the site at this point is Yvette Collazo, the Assistant Manager for Closure Projects. Mr. Gilbertson explained to Ms. Collazo and others on the call that the site needed to have a list of proposed tasks for SREL that included more detail. He also directed that each proposed task be tied to a budget line and a deliverable. Most importantly, Mr. Gilbertson directed that each task had to be reviewed to determine whether it met a "Mission Critical Need" in Fiscal Year 2007.

According to Mr. Gilbertson, he was not provided this guidance by his superiors at Headquarters and his direct supervisor, Mr. Anderson, indicated he did not inquire about the status of the Cooperative Agreement Mr. Gilbertson was now managing. This information was provided to Committee staff during interviews with Mr. Gilbertson and Mr. Anderson.

This standard—mission critical need in FY 2007—sounds rigorous and formal, but it is not a phrase commonly used by Environmental Management, and it has no formal, written definition. Although SRS staff were instructed to use this standard, they were not provided a written definition of the term. In staff interviews of SRS staff, five different people were asked to provide their definition of the term. The answers varied, and the SRS staff could not provide examples or instances in which this standard was applied to the evaluation of individual projects conducted at the site.

The implementation of the standard resulted in determinations that the proposed tasks had to result in a necessary deliverable in FY 2007 or directly facilitate site clean-up in FY 2007. Not surprisingly, by this standard almost nothing proposed by a research lab would meet this standard. In fact, the only projects that met the standard were those that SRS had been initiated in a prior year, that SRS already paid for and essentially were completed at the time of the review.

Several questions remain unanswered in relationship to the application of the mission critical need standard for review. Although several SRS staff pointed to the development of the annual budget as an example of the application of a mission critical need standard, this did not explain the results of the FY 2007 and FY 2008 budget submissions for SRS. No one could offer an explanation other than "our needs have changed" to explain how the mission critical standard resulted in a SRS budget submission with an allocation for SREL in FY 2007 and FY 2008 of $4M during the budget process if in fact SREL was not capable of performing significant mission critical tasks for SRS.

The list of proposed tasks was not developed solely by SREL. Dr. Bertsch developed the list of proposed tasks together with SRS program managers. Why did SRS staff develop a list of proposed tasks that did not meet the site's need for work?

The result of the mission critical need review was communicated to SREL on May 7, 2007 in a letter. Of the $3M in proposed tasks, DOE agreed to fund $800K. Despite the earlier guidance from Deputy Secretary Sell that public education and outreach and projects related to long-term stewardship of the site could also be proposed for funding, no tasks of this nature were proposed because SRS staff determined that no such project could meet the mission critical need standard.

The $800K offered by DOE is insufficient to support SREL. With anticipated funding cut off during the middle of the fiscal year, the laboratory is left with few options but to plan for closure.

The University of Georgia announced it was extending lab personnel's salaries through the end of June—even though DOE funding would run out at the end of May. The University decided not to formally close the lab, but 40 people were laid off from the lab effective June 29—some who had been there over 20 years. Approximately 30–40 more are being moved back to the University campus in Athens, GA in one capacity or another. The remaining 30–40 will stay on-site to carry out work funded through grants already in place from other agencies. The future of the lab and the long-term data sets it maintains is unclear unless DOE restores funding for its work. Without that core funding, the lab cannot continue to operate. Funds are available in the SRS FY 2007 budget to restore SREL funding.

Subcommittees of the Committee on Science Begin Their Investigation—May 2007

The Subcommittees sent a letter to DOE within 10 days of Dr. Bertsch receiving notice that funding was not to be continued requesting documentation concerning the decision to close SREL and requesting the Department continue funding for the laboratory until the Subcommittees completed their review of the Department's decision. The Department has not agreed to the Subcommittees' request that funding for SREL be continued. In the letters to Chairman Lampson and Chairman Miller, Mr. Anderson stated that SREL understood their commitment to become self-sustaining in FY 2007. The Subcommittees' have yet to identify any documentation of this commitment other than in letters DOE has sent to Members of Congress in response to inquiries about SREL's funding predicament.

The Department also indicated in a letter responding to Rep. Barrow's March 28 letter inquiring about SREL's funding that the Department could only approve SREL's proposed tasks for funding if the tasks were: "submitted to DOE for scientific peer review to ensure that the tasks further the Department's mission." The Subcommittee has subsequently learned that the Department did not conduct a scientific peer review of any of the proposed tasks. Mr. Rispoli's letter goes on to say that DOE had received "very few proposals from SREL that would directly further the DOE or SRS mission." This statement suggests a much broader standard was used to evaluate proposed tasks by SREL and that SRS managers played no role in the development of the tasks submitted for review.

The Subcommittee's review of this decision thus far suggests the process for developing and implementing this new Cooperative Agreement with a long-standing partner in mission-related research, education, outreach and stewardship was conducted in a manner to ensure that the 50-year relationship between the Savannah River Site and the Savannah River Ecology Laboratory ended with the signing of the agreement.

Witnesses:

Panel One

The Honorable Clay Sell is the Deputy Secretary of Energy, U.S. Department of Energy.

Panel Two

Dr. Paul Bertsch is the Former Director of Savannah River Ecology Laboratory. Dr. Bertsch is a fact witness to every major action regarding this lab from May 2005 until his forced departure in June 2007.

Ms. Karen Patterson is Chair of the Citizens Advisory Board for the Savannah River Site. Ms. Patterson will discuss the Board's activities in relationship to the funding of SREL and the Board's view of the role of SREL on the Savannah River Site.

Panel Three

Mr. Jeffrey M. Allison is the Manager of the Savannah River Operations Office, U.S. Department of Energy. Mr. Allison negotiated the original Cooperative Agreement with Dr. Bertsch in 2005 at the direction of Mr. Anderson.

Mr. Charlie Anderson is the Principal Deputy Assistant Secretary for the Office of Environmental Management, U.S. Department of Energy. Mr. Anderson is the senior manager and directed his staff to negotiate the Cooperative Agreements with SREL–UGA.

Mr. Mark Gilbertson is the Deputy Assistant Secretary for Engineering and Technology, for the Office of Environmental Management, U.S. Department of Energy. Mr. Gilbertson oversaw the review of SREL's proposed tasks for funding on behalf of DOE Headquarters at the direction of Mr. Anderson.

Ms. Yvette T. Collazo is the Assistant Manager for Closure Project for the Savannah River Operations Office, U.S. Department of Energy. Ms. Collazo was involved in the implementation of the new Cooperative Agreement with SREL–UGA for the Savannah River Site and oversight of the review of SREL's proposed tasks for funding at the direction of Mr. Gilbertson.

Chairman MILLER. The hearing will come to order.

Good morning. Welcome to today's hearing, The Department of Energy's Support for the Savannah River Ecology Laboratory, Part II.

The Savannah River Ecology Lab, SREL, served the Department of Energy, the communities affected by the Savannah River Site, and the Nation for more than 50 years. It was, by any financial measure, a very inexpensive lab to operate. It would be hard to find a better return on the investment anywhere in the federal science complex.

The lab carried out a variety of missions on the Savannah River Site, that ranged from research on environmental remediation and data collection for regulatory compliance, to education, outreach, and long-term stewardship of the site. SREL's work has saved taxpayers hundreds of millions of dollars. It has done world class science in a variety of environmental fields, and it brought the Savannah River Site credibility with the local communities that is hard to measure.

Very little about what has happened at SREL in the last two years makes any sense. The Department charged the site Manager with negotiating a new cooperative agreement in June of 2005, but never told him what the Secretary of Energy expected the agreement to contain. Jeff Allison, the Manager of the Savannah River Site, came back to Headquarters with an agreement for five years of support at $4 million a year, but the Department chastised him, scolded him, and blocked the deal.

Instead, the Department insisted on a new agreement that would guarantee $1 million a year plus as much as $3 million for the needs of the site and the Department. That was supposed to be consistent with an agreement hammered out in June of 2005, and blessed, specifically blessed by the Secretary. The site, the Savannah River Site, still believed they needed SREL, and began working last November to identify the projects that would be funded by the cleanup programs onsite. While the site staff and SREL worked together on projects, Headquarters continued to dictate every detail about the language in the final cooperative agreement, including language that said money would be contingent based upon "need, merit, and availability of funds."

The agreement was finally signed on December 1, 2006, two months into the current fiscal year—two months. From that point on, Headquarters dictated to the site how the agreement would be implemented. According to interview evidence gathered by our staff, Mark Gilbertson was given the lead, was given the task of overseeing the implementation of the cooperative agreement. He was given no guidance from his superiors, just the authority.

Mr. Gilbertson took that authority and then sent a very unusual memo to the Site Manager on January 29, 2007, telling Mr. Allison that Headquarters was going to oversee the implementation of the cooperative agreement. The memo promised a scientific peer review of projects at the site that would be conducted by the Headquarters, and a relevancy review at the site itself.

Mr. Gilbertson spoke with Yvette Collazo, who was then the Assistant Manager on the site for Closure Projects, regarding how he wanted the site relevancy review to be conducted. He apparently told her that every proposal from SREL would have to be "mission critical," would have to "meet a mission critical need in Fiscal Year 2007."

The Department of Energy site worked with SREL to turn the original list of 35 projects into 26 specific tasks, and then those same people examined the list through the filter established by Mr. Gilbertson and by Ms. Collazo, and concluded that only six of the 26 needs were "mission critical needs" in Fiscal Year 2007. The funding totaled $1.8 million, which was well below the $4 million that the Department of Energy officials and staff at the Savannah River Site knew was the minimum that the lab would need to remain viable at the site.

The standard of "mission critical needs" sounds rigorous, but nothing else at the Savannah River Site is measured by that standard. It is not a term from budgeting or from management, at least not with environmental management. In fact, no one seems to know what it means or can agree on what it means. But Ms. Collazo and Mr. Gilbertson implemented the standard to require that spending produced a tangible deliverable necessary to meet a regulatory need in the current fiscal year, more than halfway through the fiscal year. Three of the items on the task table had in fact been approved for funding at the Savannah River National Lab, but were disapproved for funding by SREL as not meeting a mission critical need in Fiscal Year 2007.

Very little work done at any research lab anywhere would pass that test. Nothing funded by the National Science Foundation, nothing funded by National Institutes of Health would likely meet that standard. The standard and the process appear to have been invented on the spot, without oversight, without review, apparently with the intention that the lab would be unable to meet the standard. If the specifics of Mr. Gilbertson's conduct were not reviewed by Headquarters, it does appear that that ultimate objective was approved.

Mr. Gilbertson said as early as September 6 that the site really only needed one lab, the Savannah River National Lab, and that SREL, which had a very different mission, and for very real reasons, needed to be independent, should be simply folded into the Savannah River Lab. And Mr. Gilbertson seems to have been given the latitude to make that happen.

The Department said that there was a rigorous peer review. They said that in letters to Members of Congress and in public statements. That is demonstrably untrue. There was no merit review. There was no technical review. There was no scientific peer review.

But the Department claimed that the lab has had two years to become self-sufficient, implying that the lab would have to move away from the Department of Energy's support, but in fact, that was never communicated to the lab in any way at any time, until just the last couple of months. Insofar as the lab knew, the Savannah River Site wanted the lab there. They valued their work. They needed their work, and they intended to fund the work of SREL. And that was how everyone expected to proceed until DOE Headquarters intervened.

Last October, Deputy Secretary Clay Sell said that the site could be funded for the full range of needs that Mr. Allison, the site manager, described. In his briefing memo of May 20, 2005, Secretary Bodman was told that the lab would be able to pursue DOE funding for the work that it was doing. We certainly asked the Department to consider returning to that earlier intention, to allow this lab to continue to do its work, and that local managers around the country understand that part of the work that they do is to retain the credibility of the sites within the communities. We urge the Savannah River Lab to release the funds that have been approved this fiscal year for the work of SREL, the continued work of SREL.

And with that, I now recognize Mr. Lampson, the distinguished Chairman of the Energy and Environment Subcommittee.

[The prepared statement of Chairman Miller follows:]

PREPARED STATEMENT OF CHAIRMAN BRAD MILLER

The Savannah River Ecology Lab (SREL) served the Department of Energy, the communities affected by the site and the Nation for more than 50 years. It was, by any financial measure, a very inexpensive lab to operate. It would be hard to find a better return on investment anywhere in the federal science complex.

The lab carried out a variety of missions on the Savannah River Site that ranged from research on environmental remediation and data collection for regulatory compliance to education, outreach and long-term stewardship of the site. SREL's work has saved taxpayers hundreds of millions of dollars, done world-class science in a variety of environmental fields and brought the Savannah River Site credibility with the local communities that is invaluable.

Very little about what has happened to SREL in the last two years makes any sense. The Department charged the site manager with negotiating a new cooperative agreement in June of 2005 but never told him what the Secretary of Energy expected the agreement to look like. Jeff Allison, the manager of Savannah River, came back to headquarters with an agreement for five years of support at $4 million a year, the Department chastised him and blocked the deal.

Instead, the Department micro-managed a new agreement that would guarantee $1 million a year plus as much as $3 million for needs of the site and the Department. This was supposed to be consistent with an agreement hammered out in June of 2005 and blessed by the Secretary. The site still believed they needed SREL and began working last November to identify projects that would be funded by the cleanup programs on site. While the site staff and SREL worked together on projects, headquarters was micro-managing the language in the final cooperative agreement—including language that said money would be contingent based upon "need, merit and availability of funds."

The agreement was finally signed on December 1, 2006—two months into the current fiscal year. From that point on, headquarters dictated to the site how the agreement would be implemented. According to evidence gathered by staff, Mark Gilbertson was given the lead on overseeing the implementation of the cooperative agreement. He was given no guidance from his superiors, just their authority to act.

Mr. Gilbertson took that authority and then sent a very unusual, perhaps unprecedented, memo to the site manager on January 29, 2007 telling Mr. Allison that headquarters was going to oversee the implementation of the cooperative agreement. The memo also promised a scientific peer review of projects at the site to be conducted by headquarters and a "relevancy" review at the site itself.

On February 20, Mr. Gilbertson spoke with Ms. Yvette Collazo, who was the Assistant Manager on the site for Closure Projects, regarding how he wanted the site relevancy review to be conducted. He apparently told her that every proposal from SREL would have to be a "mission critical need in FY 2007."

The DOE staff at the site worked with SREL to turn the original list of 35 projects into 26 specific tasks. Those same people then examined the list, through the filter established by Gilbertson and enforced by Collazo, and concluded that 6 of the 26 were deemed "mission critical needs" in the current fiscal year. The funding totaled $1.8 million—well below the $4 million that DOE and the site staff knew the lab needed to remain viable on site.

The idea that budget items pass through a "mission critical need" test sounds appropriately rigorous but nothing else in the Savannah River Site is measured in that fashion. "Mission critical needs" is not a budgeting term or management term in Environmental Management. No one knows what it means. Collazo and Gilbertson implement the standard to require the spending to produce a tangible deliverable necessary to meet a regulatory need in the current fiscal year—more than half-the-way through that fiscal year. Three of the items on the task table had been approved for funding at the Savannah River National Lab, but were disapproved for SREL as not meeting a mission critical need in FY 2007.

Very little work done at any research labs anywhere in the country would ever pass this test. Nothing funded by the National Science Foundation would ever pass such a test. Perhaps nothing funded by the National Institutes of Health would pass this standard. This standard and this process were invented by Gilbertson without oversight or review by his superiors apparently to ensure the lab would fail, a goal that may well have been approved by Gilbertson's superiors. Gilbertson said as early as September of 2006 that the site only needed one lab: the Savannah River National Lab (SRNL). He believed SREL, which has a very different mission and a very different mix of staffing and assignments, should simply be folded into SRNL. Gilbertson was given the chance to see his preference made real.

In letters to the Hill and statements to the press, the Department said that there was a rigorous peer review. That is demonstrably untrue. There was no merit review, technical review or scientific peer review.

The Department claimed that the lab has had two years to become self-sufficient—meaning by implication that they would have to move away from DOE support, but this was never communicated to the lab in any way at any time. So far as the lab knew, the site wanted and valued the lab and intended to fund it. Not until headquarters intervened, did all this change.

Last October, Deputy Secretary Clay Sell said that the site could fund the full range of needs that Allison identified. In his briefing memo of May 20, 2005, Secretary Bodman was told that the lab would be able to pursue DOE program funding. We ask that the Department return to the guidance of Secretary Bodman's memo and Deputy Secretary Sell's internal guidance and get out of the way of the site. Local managers at the sites around the country know what they need to manage their sites and retain credibility with the community. Instruct Savannah River to release the funds that had been identified for SREL in this fiscal year, in the interests of the communities, the site, the Department and the Nation.

Chairman LAMPSON. Thank you, Mr. Chairman, Chairman Miller. I appreciate your recognition, and good morning to everyone.

We welcome the second hearing on the Cooperative Agreement between the Department of Energy and the Savannah River Ecology Laboratory. As I indicated in my opening statement two weeks ago, our Subcommittees are trying to understand why a laboratory with such long and distinguished history of doing important, high quality work on the Savannah River Site has had to all but close its doors, when the ink is barely dry on the new Cooperative Agreement signed with the Department in December.

I find it difficult to believe the Savannah River Ecology Laboratory and the University of Georgia would spend over one year negotiating an agreement that would result in the closure of the laboratory. There is simply no reason for DOE to discontinue funding for SREL. There are funds available, there is work to be done. SREL has the personnel and the experience to do the work. The laboratory has the support of the scientific community, broadly, and of the local community, who rely upon the independent voice that SREL represents.

I believe the testimony today and the documents the Committee has reviewed over the past weeks, past few weeks or so, demonstrate the willingness of SREL and the University of Georgia to respond to DOE's needs. It is clear from the documentation that Dr. Bertsch made a good faith effort to align the work of the laboratory with the needs of the Savannah River Site.

What is unclear is why the cooperative effort between Dr. Bertsch on behalf of SREL and the Savannah River Site Manager, Mr. Jeff Allison, to forge a new Cooperative Agreement that would be in the interests of both parties, was scuttled at the end of the process. DOE has insisted they bargained in good faith with SREL and the University in establishing and carrying out the new Cooperative Agreement.

The documentation tells us a different story. Apparently, DOE Headquarters gave no direction to Mr. Allison prior to assigning him the task of negotiating the new cooperative agreement, but once it was complete, it is clear they were unhappy with the result of his efforts, a result that would have allocated $4 million per year to SREL for work at the Savannah River Site.

What result is DOE pleased with? A cooperative agreement with a scope of work that is relevant to the site and beneficial to the scientific and local communities, but that DOE never intends to fund, and the matrix of tasks that Dr. Bertsch compiled, with site program managers, to ensure that SREL's work would support their respective needs, but that DOE will not fund.

This situation is unacceptable. I believe DOE has bargained in bad faith, and has decided for unknown and perhaps unknowable reasons to cut off funding for this laboratory and force them to close their doors, ending 50 years of a productive, beneficial relationship between the Savannah River Site and the Savannah River Ecology Laboratory.

DOE should release the funds for the work SREL proposed to do immediately. If the Department's expectation is for this laboratory to become self-sustaining through other grants and contract, then SREL and the University of Georgia should be given an appropriate amount of time to make that transition. One year or less is not an appropriate amount of time.

Frankly, given the benefits that an independent laboratory like SREL provides to the site and to the local community, I believe DOE should be looking to establish similar cooperative agreements with other universities bordering DOE sites. The goodwill and public confidence associated with this type of arrangement are worth far more than the dollar value spent on the work.

The Savannah River Site needs SREL. DOE needs SREL. The local communities in Georgia and South Carolina need SREL, and frankly, I believe the Nation needs SREL, and more laboratories like it. DOE should abandon this misguided effort to close this laboratory, halt its important work, and violate the trust of the communities that border the Savannah River Site. There is work to be done, and SREL should be funded to do it.

I yield back my time.

[The prepared statement of Chairman Lampson follows:]

PREPARED STATEMENT OF CHAIRMAN NICK LAMPSON

Good Morning. Welcome to the second hearing on the Cooperative Agreement between the Department of Energy and the Savannah River Ecology Laboratory.

As I indicated in my opening statement two weeks ago, our Subcommittees are trying to understand why a laboratory with such a long and distinguished history of doing important, high quality work on the Savannah River Site has had to all but close its doors, when the ink is barely dry on the new Cooperative Agreement signed with the Department in December.

I find it difficult to believe the Savannah River Ecology Laboratory and the University of Georgia would spend over one year negotiating an agreement that would result in the closure of this laboratory. There is simply no reason for DOE to discontinue funding for SREL. There are funds available. There is work to be done. SREL has the personnel and the experience to do the work. The laboratory has the support of the scientific community broadly and of the local community who rely upon the independent voice that SREL represents.

I believe the testimony today and the documents the Committee has reviewed over the past few weeks demonstrate the willingness of SREL and the University of Georgia to respond to DOE's needs. It is clear from the documentation that Dr. Bertsch made a good faith effort to align the work of the laboratory with the needs of the Savannah River Site.

What is unclear is why the cooperative effort between Dr. Bertsch, on behalf of SREL, and the Savannah River Site Manager, Mr. Jeff Allison, to forge a new Cooperative Agreement that would be in the interest of both parties was scuttled at the end of the process? DOE has insisted they bargained in good faith with SREL and the University in establishing and carrying out the new Cooperative Agreement.

The documentation tells a different story. Apparently, DOE Headquarters gave no direction to Mr. Allison prior to assigning him the task of negotiating the new cooperative agreement, but once it was complete it is clear they were unhappy with the result of his efforts—a result that would have allocated $4 million per year to SREL for work at the Savannah River Site.

What result is DOE pleased with? A Cooperative Agreement with a scope of work that is relevant to the site and beneficial to the scientific and local communities, but that DOE never intends to fund, and a matrix of tasks that Dr. Bertsch compiled with site program managers to ensure that SREL's work would support their respective needs, but that DOE also will not fund.

This situation is unacceptable. I believe DOE has bargained in bad faith and has decided, for unknown and perhaps unknowable reasons, to cut off funding for this laboratory and force them to close their doors, ending 50 years of a productive, beneficial relationship between the Savannah River Site and the Savannah River Ecology Laboratory.

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Frankly, given the benefits that an independent laboratory like SREL provides to the site and the local community, I believe DOE should be looking to establish similar Cooperative Agreements with other Universities bordering DOE sites. The good will and public confidence associated with this type of arrangement are worth far more than the dollar value spent on the work.

The Savannah River Site needs SREL, DOE needs SREL, the local communities in Georgia and South Carolina need SREL, and frankly the Nation needs SREL and more laboratories like it. DOE should abandon this misguided effort to close this laboratory, halt its important work, and violate the trust of the communities that border the Savannah River Site. There's work to be done and SREL should be funded to do it.

Chairman MILLER. The Chair now recognizes Mr. Sensenbrenner for an opening statement.

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman.

Let me say that I don't think this is really an investigation, because both of the distinguished Chairs who have spoken have already stated that their minds are made up, and they don't want to be confused with the facts or confused with the testimony that is about ready to be proffered today.

Let me say that the way that they have arranged this hearing and the previous hearing, I think certainly indicates that the issue is not to talk about SREL, the work they do, and how they should be funded, but simply to cast the Department of Energy in a bad light. And I don't think this is the way responsible oversight should be done.

One of the issues relating to today's hearing is whether Dr. Raymond Orbach, who is the Under Secretary for Science in DOE, should testify today. Now, Dr. Orbach, incidentally, was the only witness that DOE asked to have present. He is not on the current witness list, and there has been some negotiation back and forth between Mr. Hall and Chairman Gordon about why this was not the case, and whether Dr. Orbach should be allowed to testify.

I think he should be allowed to testify, in order to have a complete record, so that those of us left on the Committee that have an open mind, as well as the public, can see exactly what is going on here.

DOE's recent support for SREL has come from two offices, the Office of Environmental Management and the Office of Science. Charlie Anderson, who is the head of Environmental Management, is here at the Minority's request. Because the Minority is only entitled to one witness, Dr. Orbach is conspicuously absent.

Let us look at why Dr. Orbach ought to be here. In his testimony, Dr. Paul Bertsch notes that the performance based budgeting documentation justifying the Fiscal '06 request for the Environmental Remediation Sciences Division in the Office of Science, listed SREL's studies as two of its seven major accomplishments for Fiscal '04.

Furthermore, while the Office of Environmental Management argues that SREL does not fit well within its mission, the Office of Science admits that many of SREL's projects would further its mission. Clearly, if DOE wants to support SREL, the Office of Science will have to play a role, and perhaps maybe the larger role.

The Majority's attempt to conduct this hearing without Dr. Orbach present evidences an intent not to save SREL, but to paint DOE in a negative light, and that is a shame. Lost in the unnecessary politicization of this issue is the lab itself. By all accounts, SREL has been a successful private research facility run by the University of Georgia. In her testimony, Karen Patterson pointed out the respect the local community has for SREL.

I think we all can agree that the lab has made important scientific contributions, and that its closure would be a loss for the Savannah River Site and the scientific community. But I don't believe, however, that SREL should be given free money. From its inception in 1951 until 2005, SREL received noncompetitive funding. If Dr. Orbach had been invited to testify today, he could have explained how SREL received direct, noncompetitive funding for the Office of Science for three years. This is not how our tax dollars should be spent, particularly in terms of funding scientific research.

This committee has had a reputation of strongly encouraging competitive grant-making processes, and took the hit in rejecting scientific earmarks during my chairmanship and the chairmanship of George Brown from California prior to me. If DOE funds SREL, it should be done under a competitively awarded contract, because SREL's science and what they are proposing is better than the other proposals that are placed on DOE's desk.

I also object to suggestions that DOE's behavior was in some way sinister. The Majority has suggested that DOE has somehow negotiated with SREL in bad faith. The Committee's investigation, however, has not uncovered any evidence whatsoever of this. After SREL was zeroed out of the Office of Science's budget, the Office of Environmental Management negotiated with SREL to fund the lab at $4.3 million for Fiscal Year 2006, a million for Fiscal Year

2007, plus additional funding on a task by task basis; based on need, merit, and availability of funds.

DOE's intention was to move SREL toward a more competitive funding model, without instantly pulling all the lab's funding. Miscommunications of this agreement unfortunately led to confusion amongst DOE employees at the Savannah River Site, but nonetheless, the DOE has steadfastly honored the agreement.

I look forward to hearing from today's witnesses. I hope sometime, Dr. Orbach can put his two cents' worth in, and I hope we can work fairly and cooperatively to find ways to support SREL's survival.

[The prepared statement of Mr. Sensenbrenner follows:]

PREPARED STATEMENT OF REPRESENTATIVE F. JAMES SENSENBRENNER, JR.

Absent from a very long list of witnesses today is Dr. Raymond Orbach, the Under Secretary for Science in the Department of Energy (DOE). Dr. Orbach incidentally was the only witness DOE requested to have present. Perhaps more importantly, Dr. Orbach is the head of the Office of Science. DOE's recent support for SREL (pronounced "S–REL') has come from two offices, the Office of Environmental Management and the Office of Science. Charlie Anderson, the head of Environmental Management, is here at the Minority's request. Because the Minority is only entitled to one witness, Dr. Orbach is conspicuously absent.

In his testimony, Dr. Paul Bertsch notes that the performance-based budgeting documentation justifying the FY06 request for the Environmental Remediation Sciences Division in the Office of Science listed SREL studies as two of its seven major accomplishments for FY04. Furthermore, while the Office of Environmental Management argues that SREL does not fit well within its mission, the Office of Science admits that many of SREL's projects would further its mission. Clearly, if DOE continues to support SREL, the Office of Science will play a role. The Majority's attempt to conduct this hearing without either Dr. Orbach or Charlie Anderson present, evidences an intent, not to save SREL, but to paint DOE in a negative light.

Lost in the unnecessary politicization of this issue, is the laboratory itself. By all accounts, SREL has been a successful private research facility run by the University of Georgia. In her testimony, Karen Patterson pointed out the respect the local community has for SREL. I think we can all agree that the lab has made important scientific contributions and that its closure would be a loss for the Savannah River Site and the scientific community.

I do not, however, believe that SREL should be given free money. From its inception in 1951 until 2005, SREL received non-competitive funding. If Dr. Orbach had been invited to testify today, he could have explained how SREL received direct, non-competitive funding from the Office of Science for three years. This is not how our tax dollars should be spent. If DOE funds SREL, it should be done under a competitively-awarded contract.

I also object to suggestions that DOE's behavior was, in some way, sinister. The Majority has suggested that DOE somehow negotiated with SREL in bad faith. The Committee's investigation, however, has not uncovered any evidence of this. After SREL was zeroed out of the Office of Science's budget, the Office of Environmental Management negotiated with SREL to fund the lab at $4.3 million for FY 2006 and $1 million in FY 2007, plus additional funding on a task by task basis, based on "need, merit, and availability of funds." DOE's intention was to move SREL toward a more competitive funding model without instantly pulling all of the lab's funding. Miscommunications of this agreement unfortunately lead to confusion amongst DOE employees at the Savannah River Site, but nonetheless, DOE has steadfastly honored its agreement.

I look forward to hearing from today's witnesses. I hope we can work fairly and cooperatively to find ways to support SREL's survival.

Chairman MILLER. The Chair now recognizes Mr. Inglis for an opening statement.

Mr. INGLIS. Thank you, Mr. Chairman.

And I said at a recent oversight hearing, a joint hearing like this one today, that great nations have governments that ask themselves questions, and so that is what we are doing here today, asking ourselves question. I do hope we get to the bottom of this, in as objective a fashion as possible.

It occurs to me that what we may have here is yet another case where there is an explanation that makes an awful lot of sense. And I think it splits into two observations, one is something about the private sector, and the other is about the public sector.

In the private sector, I did or do commercial real estate law when I am not in Congress, and it used to be that you could get clients to give you retainers, and that is a nice situation if you can get it. It is good work while you can get it, because with that retainer, if they don't call on you, you still get paid for that month. And you can basically afford new furniture for your office, and keep the office nice and everything, because you got retainer clients. The thing I have observed in the private sector, in the practice of law, is that fewer and fewer clients are willing to do retainers. Now, what they do is they say we will pay you on a project by project basis. They are not interested in retainers, because what we found out, what they found out is it is more efficient for them to engage the services of a law firm on a project basis, rather than on a constant retainer basis.

I think that may be what we find out here, in the case of SREL, is that the Department of Energy was saying no more retainers, we are going to pay you on a project basis. If you are the law firm that is getting that switch, it is not a very comfortable switch, because like I said, I would rather have a retainer client than a fee for service client.

The other thing that I think we may observe here is something about the public sector, and that is that if you change something in the public sector, you win yourself an investigation. And it is one of the reason why we don't get much change in the public sector, because if you change something, you get hauled before a committee to explain your nefarious motivations, whereas in the private sector, you know, you change something, well, the boss says attaboy, attagirl, whatever, thank you for changing it. But in government, the feedback loop basically says this, don't change anything, because you will be hauled before a committee to explain yourself, and therefore, we don't get much change in government.

So, I wonder if that is what we are going to find out here today, that we had some people at the Department of Energy that are trying to make the best use of scarce resources, and now they find themselves hauled before a committee to explain themselves, and whether we are going to find that we could pick up a lesson from the private sector, and put SREL on a fee for service or project basis, rather than a retainer basis, and the taxpayers would end up coming out better.

So, that is what I think we may find out here today, but I look forward to hearing the testimony of Mr. Sell and the others, and hope that with an open hearing and a full exploration of the facts, we will get to the bottom of this, and find out whether it is something wrong, or I hope my colleagues that maybe think it is something wrong might decide that no, it is actually something right.

And I yield back the balance of my time.

[The prepared statement of Mr. Inglis follows:]

PREPARED STATEMENT OF REPRESENTATIVE BOB INGLIS

Thank you, Mr. Chairman.

There are probably a few lawyers in this room, and at least some of them remember the "glory days" of retainer fees. Clients pay for a lawyer, even if the lawyer rarely provides services that help the client. The rationale, of course, was that there would come a few times when that lawyer will prove valuable, and when that happens, the client wants the lawyer around.

Coming from a lawyer, retainers were a great deal. From a client's perspective though, it's not hard to see why those "glory days" are pretty much over. There's no reason to pay for a lawyer if you aren't using the legal services. Why not just hire a lawyer when you need a lawyer?

Today, we're going to hear from some who will say that the Department of Energy needs to keep the Savannah River Ecology Lab on "retainer." And some of the evidence will point to the fact that SREL, over its 50-year career, has offered valuable services to SRS and the surrounding community in South Carolina and Georgia. Some people will say that DOE should not stop funding the lab, just because the lab's services weren't always matching up to DOE's mission.

However, as we discuss the decision made by DOE to significantly reduce funding for SREL, some may find themselves agreeing with the client (DOE), who realized that, while they were paying for specific, needed services across other programs, they still had SREL "on retainer" at that point. The Department decided that a fee-for-service approach would be a better budgetary choice. After further investigation of the research at the lab, DOE found that SREL's services were no longer needed—a decision that, if done in the private sector, would've not turned a single head.

In times of tight budgets and limited resources, we all take a closer look at our checkbook to see where our money is going. As we take ask questions about how DOE managed their checkbook, there may be value in seeing that, much as many of my legal clients eventually found out, there's little budget sense in "retainers."

Thank you again, Mr. Chairman, and I yield back the balance of my time.

Chairman MILLER. Thank you, Mr. Inglis. Mr. Hall, do you wish to make an opening statement?

Mr. HALL. Yes, sir, I do, Your Honor.

Chairman MILLER. We do have votes. We have a few minutes to get there still, Mr. Hall.

Mr. HALL. I thank you, Mr. Chairman, and I want to welcome Clay Sell, the witness, and the other witnesses that will be here today.

The Savannah River Ecology Lab, of course, is a University of Georgia facility located in the Department of Energy's Savannah River Site, that independently evaluates the ecological effects of site operations through a program of ecological research, education, and outreach. And SREL has provided these services, I think, since 1951, when it was established by Dr. Eugene Odum.

The facility was initially supported by defense programs, and then by DOE's Office of Environmental Management in the 1990s, and eventually DOE's Office of Science in 2003. And for the record, in 2005, the Office of Science cut funding for the lab after they were faced with difficult budget choices.

And right at this point, let me support Mr. Sensenbrenner's statement that this is kind of an assault on the Department of Energy. It is also an assault on Members that work for the Department of Energy, and some, in particular, that have made accusations toward that will prove to be untoward, untrue, and as a matter of fact, I think it will be shown that that particular witness aided and may have found a way to give some support to SREL. Not a critic, but actually a savior of it.

Now, after learning that SREL funding for Fiscal Year '06 has been zeroed out, Mr. Charles Anderson, Mrs. Jill Sigal, and others took it upon themselves to secure enough short-term funding to keep the lab open. That was helpful to the lab. Resuscitating SREL to the tune of $4.3 million for Fiscal Year 2006 and $1 million for Fiscal Year 2007.

Now, while these figures were obviously below prior funding levels, the starting point was zero, and they negotiated from there, and all of the interested parties, DOE, SREL, UGA, and the Georgia and South Carolina delegations agreed to them. It clearly was their hope that this additional time would give the lab opportunity to seek enough outside funding to become independent.

And in return for these concessions, the Georgia and South Carolina Congressional delegations agreed not to seek additional earmarks, and assured DOE that SREL would become self-sufficient after Fiscal Year 2007. As Dr. Bertsch was quoted in a University of Georgia faculty and staff newspaper article in July the 11th, 2005, for Dr. Bertsch, who sits right there: “We are sorry to see these fine staff members lose their positions, but if the federal grant must end, we are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources.” He knew that, and he knew that then, and I think there will be written evidence to support that.

Additionally, the Georgia and South Carolina Congressional delegations expressed satisfaction with the agreement and appreciation towards Secretary Bodman and his staff, in a June 28, 2005 press release, which will be of record.

And unfortunately, the terms of the agreement were never conveyed to the SRS, that is the Savannah River Site, a DOE group, and because of the original, because of this, the original cooperative agreement negotiated between SRS and UGA assumed outyear funding levels similar to previous years.

Without knowing of the previous negotiation, the SRS Manager even told SREL to assume they would receive $4 million in Fiscal Year 2007 for budget planning purposes. When DOE Headquarters eventually learned of the cooperative agreement in the fall of 2006, it was rejected for not reflecting the conditions of the negotiation in 2005.

Shortly thereafter, a new Cooperative Agreement was signed that provided SREL with $1 million for infrastructure in 2007, with the ability to compete for additional funding for tasks based on “need, merit, and funding availability.” While the Cooperative Agreement was negotiated, SRS and SREL staff worked hard to projectize SREL’s existing work, so they could be submitted as proposals to DOE program managers for funding. After they were initially submitted, DOE then developed a higher standard for the projects to meet. No longer were they required to just meet a site need. Now, they were required to be mission critical.

This higher standard eventually led to only six of the final 27 proposed tasks being funded by DOE. While the difference between need and mission critical could be purely semantic, I hope we will be able to determine what was really intended here today.

Eventually, the result of their assessment was that SREL would only receive around $1.8 million for Fiscal Year 2007. Because of this, UGA decided to significantly reduce SREL’s core laboratory functions in June of this year. No one wants to see SREL close. As we learned at the first hearing on this topic, the science that they do is world class, and the people that work there are of the highest caliber.

Unfortunately, DOE's Office of Science had to make hard choices in the Fiscal Year 2006 budget cycle. DOE's Office of Environmental Management stepped up to the plate in Financial Year 2006 and Fiscal Year 2007 to serve as a stopgap that kept SREL open for a couple of more years, so it could reinvent itself, something the Office of Science was trying to get SREL to do even before that.

That being said, Mr. Chairman, the lab is ultimately a UGA facility, and they will decide the lab's fate. DOE is simply a customer of the lab's services. It is my hope that we can actually find a way to ensure that SREL stays open, so that it can keep providing services to DOE, as well as many other agencies, and I hope the testimony today will shed some light on how we can do just that.

I yield back my time.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

I want to welcome our witnesses here today to discuss the future of the Savannah River Ecology Lab (SREL). SREL is a University of Georgia (UGA) facility located on the Department of Energy's (DOE's) Savannah River Site that independently evaluates the ecological effects of site operations through a program of ecological research, education, and outreach. SREL has provided these services since 1951 when it was established by Dr. Eugene Odum.

The facility was initially supported by defense programs, then by DOE's Office of Environmental Management in the 1990's, and eventually DOE's Office of Science in 2003. In 2005, the Office of Science cut funding for the lab after they were faced with difficult budget choices. After learning that SREL funding for FY06 had been "zeroed-out," Mr. Charles Anderson, Ms. Jill Sigal, and others took it upon themselves to secure enough short-term funding to keep the lab open, resuscitating SREL to the tune of $4.3 million for FY06 and $1 million for FY07. While these figures were obviously below prior funding levels, the starting point was $0, and all of the interested parties—DOE, SREL, UGA, and the Georgia and South Carolina delegations—agreed to them. It clearly was their hope that this additional time would give the lab the opportunity to seek enough outside funding to become independent.

In return for these concessions, the Georgia and South Carolina Congressional delegations agreed not to seek additional earmarks and assured DOE that SREL would become self-sufficient after FY07. As Dr. Bertsch was quoted in a University of Georgia Faculty and Staff Newspaper article on July 11, 2005, "We are sorry to see these fine staff members lose their positions, but if the federal grant must end, we are grateful that our congressional delegations have seen fit to give us a year to develop alternative funding sources." Additionally, the Georgia and South Carolina congressional delegations expressed satisfaction with the agreement and appreciation towards Secretary Bodman and his staff in a June 28, 2005 press release.

Unfortunately, the terms of the agreement were never conveyed to the Savannah River Site (SRS). Because of this, the original cooperative agreement negotiated between SRS and UGA assumed out-year funding levels similar to previous years. Without knowing of the previous negotiation, the SRS Manager even told SREL to assume they would receive $4 million in FY07 for budget planning purposes. When DOE Headquarters eventually learned of the cooperative agreement in the fall of 2006 it was rejected for not reflecting the conditions of the negotiation in 2005. Shortly thereafter a new cooperative agreement was signed that provided SREL with $1 million for infrastructure in FY07, with the ability to compete for additional funding for tasks based on "need, merit, and funding availability."

While the Cooperative Agreement was negotiated, SRS and SREL staffs worked hard to "projectize" SREL's existing work so they could be submitted as proposals to DOE program managers for funding. After they were initially submitted, DOE then developed a higher standard for the projects to meet. No longer were they required to just meet a site need, now they were required to be "mission critical." This higher standard eventually led to only six of the final 27 proposed tasks being funded by DOE. While the difference between "need" and "mission critical" could be purely semantic, I hope we will be able to determine what was really intended today. Eventually, the result of their assessment was that SREL would only receive around $1.8 million in FY07. Because of this, UGA decided to significantly reduce SREL's core laboratory functions in June of this year.

No one wants to see SREL close. As we learned at the first hearing on this topic, the science they do is world-class, and the people that work there are of the highest caliber. Unfortunately DOE's Office of Science had to make hard choices in the FY06 budget cycle. DOE's Office of Environmental Management stepped up to the plate in FY06 and FY07 to serve as a stop-gap that kept SREL open for a couple more years so it could reinvent itself—something the Office of Science was trying to get SREL to do even before that. That being said, the lab is ultimately a UGA facility and they will decide the lab's fate. DOE is simply a customer of the lab's services. It is my hope that we can actually find a way to ensure that SREL stays open so that it can keep providing services to DOE, as well as many other agencies. I hope the testimony today will shed some light on how we can do just that.

Chairman MILLER. Thank you, Mr. Hall. Mr. Sensenbrenner said that Mr. Lampson's opening statement and mine showed that we did not have open minds. We will certainly take as a model for keeping an open mind the opening statements of Mr. Sensenbrenner, Mr. Inglis, and Mr. Hall, for the future.

We now have to go to votes. It appears the vote we are going to is a protest vote, a vote to obstruct the proceedings of the House, but we have to go vote. And we will return, and we will take your testimony when we return, and deal with other matters before the Committee.

[Recess.]

Chairman MILLER. Back in session.

Mr. SENSENBRENNER. Mr. Chairman.

Chairman MILLER. Mr. Sensenbrenner.

Mr. SENSENBRENNER. Mr. Chairman, I have a letter to you, pursuant to Rule 11(j)(1), the Minority request a day of hearings out of witnesses called by the Minority of the Subcommittee on Investigations and Oversight. This is done pursuant to the rule and is signed by all four Republican Members.

Chairman MILLER. Well, Mr. Sensenbrenner, in that case, it does not appear necessary that we adjourn, as we had planned, to entertain Dr. Orbach's testimony.

All right. It is certainly, this is within the Minority's rights. We will have such a day. We will confer with the Minority about the time that that will be scheduled, and hear at that time what witnesses the Minority wishes to call. We certainly have plenty before us today, almost all of the witnesses today are witnesses from the Department of Energy.

A word about our procedures.

Mr. Sensenbrenner, the Majority staff does call my attention to Rule 11, and Rule 11(j)(1) does appear to require the Minority to specify the witnesses before the end of the day of hearings at which you request the additional day.

Mr. SENSENBRENNER. If the Chairman will yield, the purpose is to make sure that Dr. Orbach will be invited, and invited in a timely manner, so that he can prepare testimony and have the testimony approved by the Office of Management and Budget, which is the standard procedure that every Administration has had.

Chairman MILLER. Mr. Sensenbrenner.

Mr. SENSENBRENNER. And you know, if this, I would hope that this matter could be ended amicably, with an agreement that Dr. Orbach would be invited to testify. The reason I have submitted the letter to you is that if it is not, I want to make sure that it is submitted in a timely manner, because Dr. Orbach's testimony, I think, is essential to get to the bottom of this, and to have a complete statement.

Chairman MILLER. A couple points. Matters end amicably more often when they begin amicably. We have now received Dr. Orbach's testimony. We are prepared to adjourn after the third panel today, if we can adjourn before 5:30, and have Dr. Orbach appear at 5:30.

We can hold over today, and have a day of hearings of just Dr. Orbach, which we certainly hope would take less than a day, because after reviewing all the documents, and our staff spending about an hour with Dr. Orbach, or is it Dr. Orbach, it does not appear that he knows much at all about the decisions that are at issue in this hearing.

Now, is it the Minority's preference to have Dr. Orbach? Is it Dr. Orbach? Orbach. Is it Dr. or Mr.? Dr. Orbach's testimony on another day, or would the Minority prefer to adjourn until 5:30, which apparently Dr. Orbach has agreed to do?

There is no realistic possibility that any Member of this committee will be anywhere but in the House complex at 5:30, at 7:30, at 9:30, at 11:30.

Mr. SENSENBRENNER. If the Chairman will yield, I think we are prepared to hear Dr. Orbach's testimony as soon as he can come up here.

Chairman MILLER. Okay. Then we will proceed with what I was about to announce, which is that after our third panel today, we will adjourn, if we have completed the third panel before 5:30, which is not certain, given the way the day is going, and that Dr. Orbach has agreed to appear and testify at 5:30.

A word about our procedures from this point going forward. And about agreements with respect to procedures. I did say at the last hearing on this topic, and at every other occasion where the question has come up that it is my intention to try to conduct the business of this committee in as fair a way possible procedurally. I practiced law 20 years before I was elected to Congress. I always began a relationship with opposing counsel on the assumption that it would be an amicable relationship, a candid relationship, and one in which we could trust each other, however bitter the disagreements between our clients might be, that we, the lawyers, could conduct our business amicably and with mutual trust.

Unfortunately, it was the case in my law practice that some relationships with opposing counsel proved that that was not a relationship that I could trust, and for various reasons, to protect my clients' interests and to protect my own reputation, rather than being in court repeatedly arguing before a judge about what I had said and what I had not said, that I wanted all agreements to be in writing. Oral agreements, personally or by telephone, should be committed promptly to writing. Interpretations of what I had said should be committed to writing.

My understanding is that the Majority staff asked the Minority 11 days ago to designate witnesses. The first I heard that there was a problem about this was yesterday. I had a discussion with Mr. Hall by telephone yesterday at midday. It was an amicable discussion. I understood all questions had been resolved. I have heard that since then, Mr. Gordon had a conversation with Mr. Hall, that the agreement with Mr. Hall, that Mr. Hall and I had, was not one that all of the Minority agreed with, and that the Minority wished to add Dr. Orbach.

Again, the reason, although if you look at our list of witnesses, we have called lots of witnesses from the Department of Energy, and we are not calling them because we like them. We are calling them because we think they know something about the decisions that are at issue at this hearing.

Now, those of the witnesses we call, the reason we didn't call Dr. Orbach is that after looking at all the documents, all the e-mails, all the memos, discussing all the interviews with staff, it appeared that Dr. Orbach had no real involvement with the decisions that were at issue.

We do appear, unfortunately, in this committee, to have reached the point where amicable oral agreements will not suffice. And rather than have what I have said about how we will proceed questioned at every hearing, I will now ask that everybody on the Majority and the Minority side, Majority Members, Majority staff, Minority Members, Minority staff, commit to writing by at least a quick e-mail, don't worry about your grammar, don't worry about your composition skills, but commit to writing what has been agreed to, so that it will be in writing.

And if you have an interpretation of what people have said, and I understand that something I said in the last meeting was now being interpreted as a commitment that we would call certain witnesses as Majority witnesses. I would like to have known that interpretation some time ago. I would prefer not to have heard of that interpretation for the first time yesterday. If you have an interpretation of what we have agreed to, that that be committed to writing as well, and that it be committed to writing promptly, so that if there is a disagreement about what anyone said, we will know that well in advance, in time to act upon our different understandings of the agreement.

Again, it is with regret that I think we have reached that point. We are now about to be called again to another House vote that suggests that the difficulties we have with collegiality in this committee are not unique to this committee. And I understand we have now been called for another vote.

Mr. Sell, I think we do have the time to take your opening statement, but before questions, we will have to go vote, I suspect, on a motion to adjourn.

Mr. HALL. Mr. Chairman.

Chairman MILLER. Mr. Hall.

Mr. HALL. The gentleman yield?

Chairman MILLER. I yield.

Mr. HALL. Almost everything you said was correct. I did talk with you yesterday and agreed that Dr. Orbach was not important to me. I received after that a fairly ugly letter from the Republican side here, and he indicated in, that lesser letter follows, objecting to my agreement. And when Mr. Sensenbrenner objects, well, I usually pay attention to it.

And after we had talked, I did tell you that I had no interest in asking Dr. Orbach any questions, and I still don't. But I ran into the Chairman of the Committee, and he said how are things going. And I had to tell him that I just had a skirmish with Mr. Sensenbrenner, that he had criticized what I had agreed with you to do, and I had not seen you to tell you about that.

I told Barton, I figured Bertsch saw you, but one of your staffers has suggested that he helped write my letters, and that is not going to happen. I write my own letters to you, and I am not going to change them at their request, and I don't appreciate it.

Now, I am not going to resort to writing of anything that I choose not to write. My word is good, and if it is not good, why, you shouldn't deal with me.

I yield back.

Chairman MILLER. All right. Well, without going into questions of whose word is good, unfortunately, I think rather than having public discussion about who has said what to whom, we have reached a point where we need to have things in writing.

And again, I regret that.

Mr. INGLIS. Mr. Chairman.

Chairman MILLER. Mr. Inglis.

Mr. INGLIS. You might want to know this. Not a vote to adjourn. It is leading up to the rule. And by the way, that last vote to adjourn was made by Neil Abercrombie of Hawaii.

Chairman MILLER. I heard that on the Floor, to my surprise, and if it makes Mr. Inglis feel any better, I was no less annoyed by the vote that it was from one of my own.

But if Mr. Inglis would like to keep score the rest of this week on how many dilatory——

Mr. HALL. If it will help you, I will write you a letter and tell you I voted no on adjournment.

Chairman MILLER. And we now have opening statements from the various Chairs of the Subcommittees, and from Mr. Hall, the Ranking Member, the Chairs and Ranking Members of these two Subcommittees, and Mr. Hall, as the Ranking Member of the Full Committee.

If any other Members wish to submit opening statements, those statements will be added to the record at this time.

[The prepared statement of Mr. Costello follows:]

PREPARED STATEMENT OF REPRESENTATIVE JERRY F. COSTELLO

Good Morning. Mr. Chairman, thank you for calling this second hearing to examine the events leading to the Department of Energy's (DOE's) decision to withdraw funding from the Savannah River Ecology Laboratory (SREL) in fiscal year 2007.

SREL was established to track the ecological changes and the environmental consequences of establishing nuclear weapons production facilities on the Savannah River Site (SRS). SREL evaluates the effects of SRS operations through a program of ecological research, education, and outreach, involving both basic and applied environmental processes and principles, and has a distinguished record of publications, with its research staff publishing 80 or more articles in peer-reviewed scientific publications annually.

As I have stated previously, I am concerned that in the past few years, the Bush Administration's budget requests have decreased funding, and, at one point, called for the elimination of funding for this important laboratory. Of even more concern to me, are actions taken by senior level staff of the DOE regarding the negotiating of cooperative agreements, the establishment of new funding criteria, and budgetary decisions for SREL, which ultimately resulted in the end of a 50-year relationship between SRS and SREL and possibly the closure of the lab.

Mr. Chairman, I look forward to hearing from the witnesses regarding the events leading up to the funding crisis, a detail of the methods used by the DOE for determining SREL's proposed tasks, clarity regarding the DOE's technical peer review, and the extent to which all parties, specifically SREL, understood any commitment to become self-sustaining in fiscal year 2007. Again, thank you Mr. Chairman for calling this hearing and I welcome our witnesses.

Chairman MILLER. Mr. Sell, I think we have enough time, if you indeed do adhere to five minutes, to take your testimony, and then return for questions.

And we do need to swear you in. It is our practice to take Subcommittee testimony under oath. Mr. Sell, do you have any objection to being sworn in? Okay. You also have the right to be represented by Counsel. Are you represented by Counsel at today's hearing?

Mr. SELL. Well, only to the extent that——

Chairman MILLER. Mr. Sell, if you would please raise your hand, and stand. You are already standing, I see.

[Witness sworn]

Chairman MILLER. Thank you, Mr. Sell. You may begin.

Panel I:

STATEMENT MR. CLAY SELL, DEPUTY SECRETARY OF ENERGY, U.S. DEPARTMENT OF ENERGY

Mr. SELL. Thank you, Mr. Chairman. And to Chairman Lampson as well. And to the Members of the Committee. I appreciate this opportunity to come here today, to help explain the Department of Energy's relationship with the Savannah River Ecology Lab, commonly known as SREL.

I do want to say, Mr. Chairman, and I say this with the greatest level of respect, that I do have to take exception to some of the characterizations made in your opening statement and Mr. Lampson's opening statement. To the extent that you suggested that the Department or our employees dealt in bad faith, or dealt dishonestly, I simply do not think the facts bear that out.

I am not prepared to say that we have been perfect. I do not suggest that we could not have done things better, but I do firmly believe that we, this Department, and our employees, have worked in good faith to keep our commitments.

A small bit of background. SREL was established on the grounds of the Federal Government's Savannah River Site in 1951 by the University of Georgia, using funding from the Department of Energy's predecessor agency, the Atomic Energy Commission. Since that time, and up until 2005, the Federal Government provided noncompetitive funding to support this university-operated laboratory. Two years ago, however, the circumstances changed. In the Fiscal Year '06 budget proposal to Congress, which was finalized before Secretary Bodman or I arrived, the Department made the decision to terminate support for research in surficial science, which is SREL's primary area of expertise. No money in the Fiscal Year 2006 budget request was requested for SREL, in order for the Department to focus its very limited resources on higher basic science priorities.

Now, after hearing concerns from the Congress, the Department of Energy and Secretary Bodman made the decision to instead support a more measured withdrawal of its direct funding support from the Savannah River Ecology Lab, while assisting in its transition to a future of self-sustainability.

Subsequently, representatives from the Department of Energy, the University of Georgia, and interested Congressional offices met numerous times to discuss the Department's future funding contributions to SREL. Those discussions concluded in May of 2005, over two years ago, with an agreement that the Department would provide funds in the total of approximately $4 million in Fiscal Year 2006 and $1 million for Fiscal Year 2007, in addition to any funds awarded through the competitive review process. Implicit in this agreement was the understanding that following Fiscal Year 2007, the Department of Energy would no longer provide guaranteed funding to SREL. The Department's future funding engagement with the laboratory would be limited to funding individual SREL projects, based on the Department's mission need, the merit of those proposals, and the availability of funding.

Additionally, the University of Georgia committed that it would pursue project by project financing from other institutions, as well as the Department of Energy, in order to become self-sustaining, and to wean itself from noncompetitive federal support.

It remains, and I would like to emphasize this, it remains our collective hope and expectation that the agreement reached in 2005 would permit the laboratory to operate, and continue to operate, and even to expand its horizons, as has been the case for the Savannah River National Laboratory. SRNL receives no guaranteed funding and has grown its budget to nearly $140 million by making its substantial R&D capabilities available to other government and private customers.

The Savannah River National Lab model is a successful one, which we quite frankly hope to replicate by memorializing the May 2005 agreement with a formal cooperative agreement in December 2006.

Chairman MILLER. Mr. Sell, I do have three and one-half minutes to get to the Floor, and it takes me about seven to get there.

I do want to have the opportunity to hear your testimony. Would you mind holding off and completing it when we return?

Mr. SELL. Of course not.

Chairman MILLER. All right. Thank you, Mr. Sell.

[Recess.]

Chairman MILLER. Mr. Sell, would you like to complete your testimony?

Mr. SELL. Yes, I would. Thank you, Mr. Chairman, and I believe I can do that in, I believe in short of two minutes.

I was just talking about the example of the Savannah River National Lab, and we at the Department do believe it is a model, or that model is a successful one, which we hope to replicate by memorializing the May 2005 agreement with SREL with a formal cooperative agreement in December 2006.

The formal December agreement was signed by the Department of Energy and the University of Georgia. I have a copy of it here, and I request your approval to submit the copy of the agreement as part of the formal hearing record.

Chairman MILLER. That would be fine. I think we have, I assume we have received this in advance, Mr. Sell.

Mr. SELL. Yes, you have.

Chairman MILLER. Okay. Then we will admit it into evidence.

[*See Appendix: Additional Material for the Record.*]

Chairman MILLER. Will you put it in the record of the hearing at this time?

Mr. SELL. I had hoped that was the case, but I saw your staff nodding behind you, so I know it was the case.

Chairman MILLER. I saw them too. That is why.

Mr. SELL. I should note, and this is important.

Mr. HALL. Was it made a part of the record or not?

Chairman MILLER. Yes, it was. Without objection, it is now part of the record.

Mr. HALL. That is what I wanted to hear. I didn't even need that in writing.

Chairman MILLER. All right.

Mr. SELL. I should note, Mr. Chairman, that in the timeframe following conclusion of the May 2005 agreement, but before it was memorialized in this agreement in December 2006, SREL was provided information by our Savannah River Site Manager, Jeff Allison, to use $4 million as a planning level for Fiscal Year 2007.

At that time, Mr. Allison was uninformed of the terms of the May 2005 agreement, and this in fact caused some confusion. Upon learning those terms in October of 2006, Mr. Allison corrected the record and the understanding with SREL.

In summary, the Department of Energy values the work done by the Savannah River Ecology Lab. It was the hope and expectation of the Secretary, of me, and of all involved, that SREL would develop a plan to secure outside funding to become more self-sustaining, as is the practice of other research institutions, and as they themselves had committed to doing in both May 2005 and December 2006.

Since that initial agreement, the lab has had nearly two years to plan for the point at which DOE would no longer provide direct operational support on a noncompetitive basis. It is unfortunate that the Savannah River Ecology Laboratory has been unable to do so, and that the University has not responded with a plan for how they intend to transform the lab into a thriving, self-sustaining institution.

We at the Department of Energy have kept, and we will continue to keep our commitments to SREL under the terms of the cooperative agreement.

And with that, I am happy to answer your questions.

[The prepared statement of Mr. Sell follows:]

PREPARED STATEMENT OF CLAY SELL

Good Morning Chairman Miller, Chairman Lampson, and Members of the Committee. I appreciate this opportunity to come here today to help explain the Department of Energy's relationship with the Savannah River Ecology Laboratory. . .commonly known as SREL.

SREL was established on the grounds of the Federal Government's Savannah River Site in 1951 by the University of Georgia using funding from the Department of Energy's predecessor agency, the Atomic Energy Commission. Since that time, and up until 2005, the Federal Government provided non-competitive funding to support this University operated laboratory.

Two years ago, however, the circumstances changed.

In light of sound management principles, a tight budget atmosphere, and considering the necessity to balance national priorities while maximizing technical, scientific, and mission-driven return on the taxpayer dollar, the Department of Energy (DOE) made the decision to support a measured withdrawal of its direct funding support from the Savannah River Ecology Lab, while assisting its transition to a future of self-sustainability.

Subsequently, representatives from the Department of Energy, the University of Georgia, and interested Congressional offices met numerous times to discuss the Department's future funding contributions to the Lab. Those discussions concluded in May 2005 with an agreement that the Department would provide funds in the total of $4 million for Fiscal Year 2006 and $1 million for Fiscal Year 2007 in addition to any funds awarded through the competitive review process. Implicit in this agreement was the understanding that following FY07, DOE would no longer provide guaranteed funding for the Laboratory. The Department's future funding engagement with the Laboratory would be limited to funding individual SREL projects based on the Department's mission need, merit of the proposals, and funding availability. Additionally, the University of Georgia committed that it would pursue project-by-project financing from other institutions, as well as DOE, in order to become self-sustaining and to wean itself from non-competitive federal support.

It remains our collective hope and expectation that the agreement reached in 2005 would permit the Laboratory to operate—and even expand its horizons—as has been the case for the Savannah River National Laboratory which receives no guaranteed funding and has grown its budget to nearly $140 million annually by making its substantial R&D capabilities available to other government and private customers.

The Savannah River National Lab model is a successful one which we hoped to replicate by memorializing the May 2005 agreement with a formal Cooperative Agreement in December 2006. The formal December agreement was signed by the Department of Energy and the University of Georgia (I request your approval to submit a copy of this Agreement for the Record). [*See Appendix: Additional Material for the Record.]*

I should note that in the time frame following conclusion of the May 2005 agreement, but before it was memorialized in December 2006, SREL was provided information by our Savannah River Site Manager, Mr. Jeff Allison, to use $4 million as a planning level for Fiscal Year 2007. At that time, Mr. Allison was uninformed of the terms of the May 2005 agreement. Upon learning those terms in October 2006, Mr. Allison corrected the record with the Laboratory.

In summary, we value the work done by the Savannah River Ecology Laboratory. It was the hope and expectation of the Secretary, me, and all involved, that the Laboratory would develop a plan to secure outside funding to become self-sustaining, as is the practice of other research institutions and as they themselves had committed to doing in both May 2005 and December 2006. Since that initial agreement, the Lab has had nearly two years to plan for the point at which DOE would no longer provide direct operational support on a non-competitive basis. It is unfortunate that the Savannah River Ecology Laboratory has been unable to do so and that the University has not responded with a plan for how they intend to transform the Lab into a thriving, self-sustaining institution. We at the Department of Energy have kept and will continue to keep our commitments to this Lab under the terms of the Cooperative Agreement.

I am happy to answer your questions.

BIOGRAPHY FOR CLAY SELL

Clay Sell was sworn in March 21, 2005 as Deputy Secretary of Energy after being unanimously confirmed by the United States Senate. As Deputy Secretary, Mr. Sell plays a vital role in maintaining and strengthening the economic and national security of the Nation while supporting the important scientific and research missions conducted by the Department of Energy. The Deputy Secretary also serves as the Department's Chief Operating Officer (COO) and assists the Secretary with policy and programmatic oversight over the 100,000 employee, $23 billion agency.

Since February 2004, Mr. Sell served as a Special Assistant to the President for Legislative Affairs, specializing in coordinating and promoting the President's legislative agenda in the United States Senate with a primary focus in the policy areas of energy, natural resources, budget, and appropriations. Previous to his work in the Legislative Affairs Office, Mr. Sell served as a member of the President's National

Economic Council and as Special Assistant to the President for Economic Policy. As such, he was the President's primary advisor on issues pertaining to energy and natural resources, and he coordinated the development and implementation of the Administration's energy policy.

Prior to his service at the White House, Mr. Sell was the Staff Director and Majority Clerk of the Senate Energy and Water Development Appropriations Subcommittee, working directly for the Subcommittee Chairman, Senator Pete Domenici of New Mexico and the Full Committee Chairman, Senator Ted Stevens of Alaska. Mr. Sell led the Republican staff of the Energy and Water Subcommittee from January 2000 to July 2003.

Previously, Mr. Sell served on the Bush-Cheney Transition as part of the energy policy team. From 1995 to 1999, he served on the staff of Congressman Mac Thornberry of Texas, functioning the last two years as the Congressman's Administrative Assistant.

Before moving to Washington, Mr. Sell practiced law in Texas. He received his Bachelor's degree from Texas Tech University and his J.D. from the University of Texas School of Law. He and his wife have three children.

DISCUSSION

Chairman MILLER. Thank you, Mr. Sell.

At this time, the Chair, this will be our first round of questions. The Chair recognizes himself for five minutes.

SREL FUNDING SOURCES FOR FISCAL YEARS 2006 AND 2007

Mr. Sell, you spoke in your testimony of the deal concerning SREL in May of 2005, or about that time in 2005. There was a memo prepared for Secretary Bodman in May of 2005, which supposedly sets out the deal for SREL funding for Fiscal Years 2006 and 2007. There is also an e-mail from Mr. Rispoli of Environmental Management, of last October, that set out a path forward for SREL.

Neither of those sets out that there were orders that DOE programs not fund SREL. Is that correct? Is there any writing, is there anything in writing giving a direction for the Department of Energy programs not fund SREL?

Mr. SELL. To my knowledge, the direction that came out of the May 2005 agreement was what level of base noncompetitive funding SREL would receive, and that was basically $4 million and change for Fiscal Year '06, and $1 million in Fiscal Year 2007.

Chairman MILLER. But it was your intention that there be other funding available on a competitive basis.

Mr. SELL. It was contemplated that SREL would seek and hopefully receive other funding from Departmental elements, as well as other outside elements, and in fact, that is something that I think was encouraged.

Chairman MILLER. Our staff has met with Mr. Allison, who I think will testify later today, I think is on the way behind you, that he was the DOE Site Manager for Savannah River. He explained to you that the lab, on October 16 of last year, that the lab needed to do research, support regulatory matters, do education, outreach work, and help with stewardship of the Savannah River Site.

Do you recall that meeting?

Mr. SELL. I recall the meeting. I do not specifically recall that exact conversation, but I have no reason to believe that is not an accurate characterization.

Chairman MILLER. Okay. And he explained that that was the work that he had agreed to, and why he had negotiated a five-year, $4 million a year agreement with SREL. Is that correct, or do you not recall?

Mr. SELL. I recall Mr. Allison telling me, in fact, that he was not aware of the May 2005 agreement, which set the levels of base noncompetitive funding for SREL, and that he had assumed, in negotiating the five year Cooperative Agreement, that the Fiscal Year 2006 level of basically $4 million, would be continued as base noncompetitive funding through the five-year extension of the Cooperative Agreement. I took the opportunity to acquaint Mr. Allison of the specific terms of the May 2005 agreement, as I understood them, and as, quite frankly, everyone with the exception of Mr. Allison understood them in May of 2005.

Chairman MILLER. Okay. Well, on that same day, you directed Mr. Rispoli that the site could support the lab, and that the needs can, and this is a quotation from the e-mail, an e-mail from Mr. Rispoli—apparently, they put everything in writing at the Department of Energy: "The needs can include what was presented today." Is that, did Mr. Rispoli get it wrong?

Mr. SELL. Mr. Chairman, I agree with you. To the extent that Mr. Rispoli's e-mail suggested that SREL could make proposals for additional funding, in addition to the base funding, for mission activities, that is something that was contemplated, supported, and encouraged.

Chairman MILLER. Again, with respect to the mission, do you agree that the mission described by Mr. Allison and that Mr. Rispoli was referring to, was research, support on regulatory matters, education, outreach work, and stewardship of the site.

Mr. SELL. Mr. Chairman, none of those concepts strike me as inconsistent with what the Department of Energy is seeking to accomplish in Savannah River. Quite frankly, I leave decisions on what is appropriate to the mission, what is needed for the mission, what is appropriate given the funding constraints for what we are trying to accomplish, I leave those determinations to the Program Officer, who is Assistant Secretary Jim Rispoli, his deputy Charlie Anderson, and the members of the Environmental Management team.

If they determined that those activities were appropriate, then I would have no reason to believe that determination was incorrect.

Chairman MILLER. So, the additional funding that would be, as you said, competitive, could include all of that work. All that work would be eligible for the funding that you say would be based competitively, not noncompetitively. Would it not be a lump sum, but would be task by task, competitively granted?

Mr. SELL. From my perspective, Mr. Chairman, there is no reason that couldn't be, but I want to emphasize that I would leave that, from my standpoint as the Chief Operating Officer of the Department, to the Program Head, Mr. Rispoli, and his team.

Chairman MILLER. All right. Well——

Mr. SELL. If they said it was appropriate, then I would accept that it is appropriate. If they concluded otherwise, I would conclude otherwise.

Chairman MILLER. All right. My time has expired. Mr. Lampson.

Chairman LAMPSON. Thank you, Chairman Miller, and we will continue with some of that.

Can you explain, Mr. Sell, why DOE spokespeople, in statements and letters, keep talking about the need for the lab to be self-sustaining, it is a phrase in your own testimony, and what does it mean if not that the lab should pursue DOE program dollars, as well as other sources of funding? I think at the time, that was okay with you and the Secretary. Is that right?

Mr. SELL. The reason, Mr. Lampson, that we refer to a desire for SREL to be self-sustaining is because they are an important institution, and they do good work, particularly in the area of surface ecology. In fact, we are spending in addition to the $1 million in base funding in Fiscal Year 2007, $1.2 million to do additional work that is necessary to the Department. It is our desire that we continue to have the opportunity to contract with SREL many years into the future.

But that is different from a commitment to carry all of the overhead and base funding that is required to keep SREL operating. It is our desire that they become self-sustaining, that they are a viable and growing institution that we can continue to use.

If I may, Mr. Lampson, give you some of the context of Fiscal Year 2006 and 2007. We spend, on environmental cleanup, about $1.2 billion a year at the Savannah River Site, and there are still many things that many of the citizens of the area would like us to do. They would like us to do it faster. They would like us to complete things more quickly, and we simply don't have the resources to do that.

For me, ultimately, as I look at this question, it is do we want to divert resources from cleanup in order to pay, if I may use Mr. Inglis' analogy, a retainer to the University of Georgia's laboratory, or would I prefer to take those resources, devote more to cleanup, and only buy from SREL what we actually need to conduct our mission?

Our decision, and I think it was the right one, was to opt for the latter course.

DETAILS OF THE COOPERATIVE AGREEMENT

Chairman LAMPSON. Dr. Bertsch's business plan in May of 2005 shows that he understood that there was to be a shift in the way DOE funded the lab, but nothing anywhere suggests that the Department was looking at controlling what the site could do to place work with the lab, and that is what ultimately happened.

How much warning did the lab have that Headquarters was going to manage the SREL Cooperative Agreement?

Mr. SELL. I believe, and I think the testimony will indicate that SREL knew exactly what the terms were, going forward, in May of 2005.

Chairman LAMPSON. When did the notice come? When did notice go to them?

Mr. SELL. I believe they knew that in May of 2005. If you are using notice in terms of——

Chairman LAMPSON. That Headquarters was going to do that at that——

Mr. SELL. The suggestion that this was being controlled out of Headquarters, I don't know that I can necessarily agree with that. Certainly, Headquarters, Secretary Bodman, or then Assistant Secretary for Congressional Affairs, Jill Sigal and Charlie Anderson, were part of a decision in May of 2005 that was prompted by Members of Congress, who wrote letters to Secretary Bodman saying get involved in this. We don't like your Fiscal Year 2006 budget request that zeroed out completely the SREL, and please get involved. He did get involved. As he indicated in his letter, we developed a workout that was $4 million in base funding in '06, $1 million in base funding in '07, and that was communicated to SREL, and I believe was well understood by everyone, except for Mr. Allison.

Chairman LAMPSON. Notice went to them, though, for the record, January 29 of '07. So, the lab had to change its approach to funding everyone, that everyone can agree was a clear message, but there is no message to the lab, not from Anderson, not from Allison, that the Department was not interested in work from the lab until the spring of 2007. And there is no indication of any communication, and/or in any communication to the lab that Headquarters was going to micromanage the site's relationship with SREL until January of '07, and that doesn't sound like two years notice.

Mr. SELL. Mr. Lampson, I don't know that there was ever a decision for Headquarters to micromanage this contract. Maybe there was, and perhaps it is a better question to some of the subsequent DOE witnesses, but certainly, the Secretary and I, and those that we hold accountable——

Chairman LAMPSON. Can you show that to me in writing? Where is the proof of that, of what you are stating right now?

Mr. SELL. I am sorry. Where is the proof of——

Chairman LAMPSON. Your statements and the Secretary's statements to SREL. You are saying that SREL knew what the deal was two years ago. Where is the proof of that?

Mr. SELL. I know that Mr. Anderson, who is sitting behind me, and was then the acting head of Environmental Management, had a conversation with the Director of SREL——

Chairman LAMPSON. So, the proof is in a conversation.

Mr. SELL. I believe he will testify to that. I know that we also had conversations with members of the higher level leadership of the University of Georgia. There were also contemporaneous notes taken, as reflected in a memorandum to the Secretary.

Chairman LAMPSON. What about with Mr. Allison?

Mr. SELL. Mr. Allison was not aware of it, to my knowledge. He has said that he wasn't, and I believe him. But I also believe Mr. Anderson, who I have great regard for, and is a very distinguished career civil servant at the Department of Energy. When he tells me that he talked to the Director of SREL in May of 2005, and made him explicitly aware of what the understanding was, I believe him.

Chairman LAMPSON. My time is expired. I yield back, Mr. Chairman.

Chairman MILLER. Thank you. Mr. Sensenbrenner is recognized for five minutes.

DOES THE DEPARTMENT OF ENERGY AWARD NONCOMPETITIVE FUNDING?

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman. Let me start out by alluding to what I said earlier on today, and that is that this committee has historically been very supportive of the business of competitive funding for research, whether it is in DOE, NSF, NASA, or any of the other agencies under our jurisdiction. And the same thing has been true for the Energy and Commerce Committee and the Agriculture Committee on agricultural grants and NIH grants.

Why did SREL think that they could not survive in a competitive grant environment?

Mr. SELL. Mr. Sensenbrenner, I don't know that they did think that, and I just can't, I can't speak to that. Our belief and our hope was that they could survive, and that they could, in fact, thrive, in a competitive environment.

Mr. SENSENBRENNER. Of course, it is always easier to back up to the pay window on the first day of the fiscal year, without writing a grant application and competing against grant applications that are in the same area or under the same niche in the budget, whether it's in DOE or any other agency.

Does DOE support any other labs noncompetitively, like they did with SREL?

Mr. SELL. I am sure that there are examples, in our Department's history, that are comparable to SREL. And certainly, some of our laboratories that are government owned and operated by contractors, are managed and structured in a different way. They are managed under a management and operating contract, with an entity like the University of Chicago, where we do, in fact, carry all of the overhead, and pay all of the salaries for the facility, and then task the facility to do certain kinds of work.

But I am not aware of other outside entities at the Department of Energy, where we contract for work, where we also just pay for all of their overhead and carrying costs.

Mr. SENSENBRENNER. Okay. Has it been the policy of the Department, at least as long as you have been there, to place emphasis on competitive grants rather than noncompetitive grants?

Mr. SELL. Yes, sir.

Mr. SENSENBRENNER. I have no further questions.

Chairman MILLER. Mr. Hall is recognized for five minutes.

MR. SELL'S ROLE IN THE COOPERATIVE AGREEMENT

Mr. HALL. Mr. Sell, just what role did you actually play in negotiating the Cooperative Agreement between University of Georgia and DOE?

Mr. SELL. I played no role in the negotiation of the agreement.

Mr. HALL. And what role did you play in the 2005 negotiation with Georgia and South Carolina Congressional delegation?

Mr. SELL. Mr. Hall, I was not involved in those discussions at all.

Mr. HALL. You delegate those things, don't you?

Mr. SELL. I try to.

Mr. HALL. What role did you play in revising the cooperative agreement?

Mr. SELL. I was not involved in that.

Mr. HALL. And did you have any role in evaluating the projects proposed earlier in the year?

Mr. SELL. I was not involved in that, and quite frankly, I think it would be inappropriate for me to be involved.

NEW FUNDING CRITERIA FOR SREL

Mr. HALL. Did you have any role in developing the criteria of the "mission critical" that SREL's tasks had to meet, or that you requested that they meet? You didn't have anything to do with that, did you?

Mr. SELL. I had no role in that, and that is something, quite frankly, I expect the program head and his team to be responsible for.

Mr. HALL. Does DOE have another lab at Savannah River Site?

Mr. SELL. We do have another lab, the Savannah River National Laboratory, which is also on the Savannah River Site.

Mr. HALL. That lab came from a lump sum grant, or by task by task basis?

Mr. SELL. It is funded on a task by task basis, from the Department of Energy and other federal and private entities.

Mr. HALL. Is the work competitively awarded?

Mr. SELL. My understanding and belief is that it is.

Mr. HALL. Treated the same or similar to the instance we are in question here on?

Mr. SELL. Yes, sir.

Mr. HALL. Does that work have to align with program needs?

Mr. SELL. Certainly. It is the desire of the Department of Energy to only fund work that we actually need to carry out our missions.

Mr. HALL. Earlier this spring, program managers were tasked to evaluate work proposed by SREL, to determine if they had a need for work. And soon thereafter, they were asked to determine if the task met a "mission critical need." What is your definition of a mission critical need?

Mr. SELL. First, as an operating principle, I leave it to the program head to determine what is mission critical, but work that is necessary to achieve elements of our mission, I would refer to as mission critical.

Mr. HALL. Who would know more about the issue in question here than you know, then?

Mr. SELL. I think just about anybody of the people sitting behind me——

Mr. HALL. Okay.

Mr. SELL.—would know more about that.

Mr. HALL. And specifically, who—at one time, this was a zeroed out issue, was it not?

Mr. SELL. It was. It was——

Mr. HALL. Who made that decision?

Mr. SELL. Well, ultimately, that was a decision made by the Department of Energy. At the time, we were led by a different Secretary, and we were led by a different Assistant Secretary for Environmental Management. Ray Orbach, who was then head of the Office of Science, was there at the time, and he was certainly a party to that decision to zero out funding in Fiscal Year 2006.

Mr. HALL. And who brought it to your attention?

Mr. SELL. This issue actually was not brought to my attention, that I can recall——

Mr. HALL. Who was the first one to complain that they had been zeroed out? So far as you know.

Mr. SELL. That was brought to the Department by Congressional delegations in South Carolina and Georgia.

Mr. HALL. And what were they told?

Mr. SELL. Originally, Secretary Bodman, responded to the letters, and explained that due to the tight funding constraints in the Office of Science, and due to a decision to focus our Basic Science R&D work on the subsurface, on the movement of contaminants in the subsurface, rather than on the surface, that we had made the difficult decision to terminate base funding for the Savannah River Ecology Lab in our Fiscal Year 2006 budget proposal.

Mr. HALL. And you have that in writing somewhere in your files, do you not?

Mr. SELL. That was in writing. It is reflected in the letters. I believe it is reflected in our original Fiscal Year 2006 budget justification.

DOE SUPPORT FOR SREL

Mr. HALL. Then who, if anyone, came to the aid of SREL, within the Department?

Mr. SELL. Within the Department, it was principally Assistant Secretary Jill Sigal, and then Acting Assistant Secretary Charlie Anderson of the Environmental Management. And of course, Secretary Bodman and I were new to the Department. We had not been party to the development of the Fiscal Year 2006 budget. They made the case that the work at Savannah River Ecology Lab was important, and that we should have a more measured withdrawal of the base funding from the laboratory. They were the ones that took the leadership in negotiating an agreement which was acceptable to the University of Georgia, and the Georgia and South Carolina delegations, which resulted in $4 million base funding in '06, $1 million in '07, and the opportunity to earn additional amounts in all and future years.

Mr. HALL. And did you and Mr. Bodman both see that as an effort by Jill Sigal to support SREL?

Mr. SELL. Yes, we did.

Mr. HALL. And was she successful?

Mr. SELL. Well, I believe that she was successful. It was a workout that was, I think, good and appropriate for SREL, and also, quite frankly, for the Department of Energy.

Mr. HALL. So far as you know, did she have anything to do with zeroing them out?

Mr. SELL. I am not aware that—I just don't know that she had anything to do with the decision in Fiscal Year 2006 to zero the laboratory.

Mr. HALL. But you do know that she came to their aid and worked it through.

Mr. SELL. I do know that.

Mr. HALL. I yield back.

Chairman MILLER. Mr. Hall yields back a negative a little more than a minute.

Mr. HALL. I owe you some.

Chairman MILLER. We did. You had not exceeded your time by any more than I had.

Mr. HALL. Mr. Chairman, we fuss back and forth, but you have been very generous. I am one of your fans.

Chairman MILLER. All right. Thank you. Mr. Inglis is recognized for five minutes.

Mr. INGLIS. Thank you, Mr. Chairman. Mr. Sell, SREL does good work?

Mr. SELL. They do good work, particularly in the area of surface ecology.

Mr. INGLIS. And so, their work is valuable, and there is no dispute about that.

Mr. SELL. Their work is valuable, and we desire to have a continuing relationship, where we continue to procure services from SREL.

Mr. INGLIS. How would that work, that you would procure their services?

Mr. SELL. The way we contemplated it working is that SREL would make proposals for work to the Department, and if the Department determined them to be appropriate from a mission standpoint and from a merit standpoint, and that we had available funds, the Department would make the decision to procure the scientific work from SREL.

Mr. INGLIS. And I suppose your other agencies or labs available to you, to go to for that work as well. In other words, SREL would have to compete with other potential providers.

Mr. SELL. They would conceivably have to compete with other providers. There are other very good providers associated with the University of South Carolina, associated with the University of Georgia. There are private sector vendors of these services, and other universities that could potentially do that, and laboratories. But the Department has a high regard for the quality of work we have received over the years from SREL.

Mr. INGLIS. This action by the Department involves a different funding mechanism. Basically, they can no longer count on, SREL wouldn't be able to count on money at the beginning of the year.

Mr. SELL. It is our desire, and it is the agreement that we made, that beginning in Fiscal Year 2008, there would be no base, automatic, noncompetitive award of money to SREL; going forward, all funds that go to SREL would be on a competitive basis.

Mr. INGLIS. Nearby, Savannah River National Lab operates. Does it—what kind of funding arrangement does it have?

Mr. SELL. They receive no base funding from the Department. It is all done on a task by task basis from the Department, as well as other federal agencies, and the private sector. That is a model which has proven to be very successful. Savannah River National Lab has a budget in excess of $140 million of work now, on an annual basis.

Mr. INGLIS. That they have gone out and won, basically. They have bid for it or won. Somehow, they have achieved that success.

Mr. SELL. They won it based on their impressive R&D capabilities, and they have marketed those, and they have been rewarded.

Mr. INGLIS. And so, answering, that number is $140 million?

Mr. SELL. $140 million and thereabouts.

Mr. INGLIS. SREL's base amount they were getting was?

Mr. SELL. SREL had historically been receiving, or in recent history, before Fiscal Year 2006, about $8 million a year in base funding from the Department of Energy.

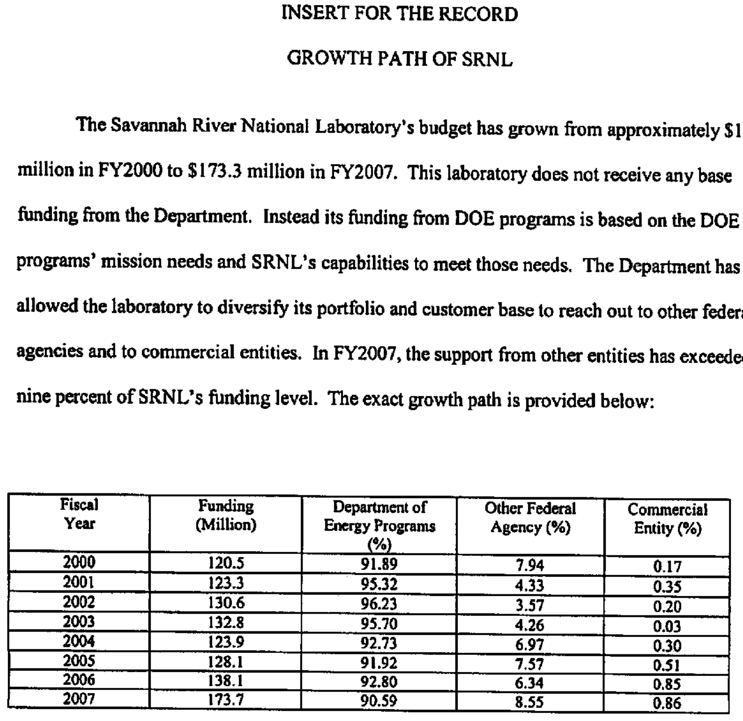
Mr. INGLIS. So, I wonder, this may be a hard, you are not here to talk about Savannah River National Lab, but I wonder how it has ramped up to $140 million. Do you have any idea how it has ramped up to $140 million? In other words, did it start out at $140 million, or did they, did it grow?

Mr. SELL. It is my belief, sir, that it has grown. If I could, I would like to provide the exact growth path——

Mr. INGLIS. Right.

Mr. SELL.—to you for the record.

[The information follows:]



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GROWTH PATH OF SRNL

The Savannah River National Laboratory's budget has grown from approximately $120 million in FY2000 to $173.3 million in FY2007. This laboratory does not receive any base funding from the Department. Instead its funding from DOE programs is based on the DOE programs' mission needs and SRNL's capabilities to meet those needs. The Department has allowed the laboratory to diversify its portfolio and customer base to reach out to other federal agencies and to commercial entities. In FY2007, the support from other entities has exceeded nine percent of SRNL's funding level. The exact growth path is provided below:

Fiscal Year	Funding (Million)	Department of Energy Programs (%)	Other Federal Agency (%)	Commercial Entity (%)
2000	120.5	91.89	7.94	0.17
2001	123.3	95.32	4.33	0.35
2002	130.6	96.23	3.57	0.20
2003	132.8	95.70	4.26	0.03
2004	123.9	92.73	6.97	0.30
2005	128.1	91.92	7.57	0.51
2006	138.1	92.80	6.34	0.85
2007	173.7	90.59	8.55	0.86

Mr. INGLIS. Yeah, I realize that is not the subject of the hearing, but it is an interesting comparison. These are two facilities fairly close by to each other, same kind of people work at both of them, I would think, except that the Savannah River National Lab, I suppose, has Department of Energy employees, I suppose, right, or?

Mr. SELL. It is actually operated by our site contractor, so they are actually contractor employees, but——

Mr. INGLIS. Yeah, so—but similar kinds of communities, similar kinds of people, same proficiencies, experts in what they do. And so, I guess, I think it is just, it is interesting to note that two facilities close by, one growing without base funding, the other losing its base funding, but being given the same opportunity.

I am almost out of time, but do you want to comment on that——

Mr. SELL. It was certainly our hope and our expectation, and our desire that SREL follow a similar path that we had seen the Savannah River National Laboratory pursue with such success.

Mr. INGLIS. Thank you.

Mr. SELL. And that continues to be our desire.

Mr. INGLIS. Thank you. I yield back, Mr. Chairman.

Chairman MILLER. Thank you, Mr. Inglis, and the Chair applauds the Members more or less keeping to their time requirements, the time limits.

WHO KNEW ABOUT SREL FUNDING CHANGES?

Mr. Sell, you testified earlier that only Jeff Allison appears to have been out of the loop. Only Jeff Allison appears not to have understood the deal, that he said that, that he didn't understand that SREL would get no more than $1 million in base funding. Everything else would be based upon competition. He said he didn't know that, nobody told him, and you believed him. Is that correct?

Mr. SELL. Yes. I should clarify. When I say Jeff Allison, I really, to be more accurate, it is really Jeff Allison and his team.

Chairman MILLER. Okay.

Mr. SELL. In the Savannah River Site office. Those that work for him.

Chairman MILLER. Okay. But you have said that SREL itself understood. Is that right?

Mr. SELL. That is my belief.

Chairman MILLER. Okay. And so, Dr. Bertsch is here today. This is the second time he has come. And I understand, based upon his interviews with our staff, that he will testify that nobody told him, either.

Do you believe that Dr. Bertsch is not testifying truthfully if that proves to be his testimony?

Mr. SELL. I have reviewed the testimony as well, and there are obviously different recollections. But I will tell you, Mr. Chairman, that I hold Charlie Anderson in high regard, and he has told me that he had a conversation with the Director of SREL, and I believe him.

Chairman MILLER. Mr. Anderson told you that.

Mr. SELL. Yes, he has.

Chairman MILLER. My understanding is that he has told our staff, in their interviews to prepare this hearing, that he did not, he does not recall telling either Mr. Allison or Dr. Bertsch. Okay. What he—excuse me. I am corrected. He does not remember exactly when or exactly how.

We have asked for——

Mr. SELL. Mr. Chairman, if I may, the fact that the Director knew the situation, I do believe is reflected in the statement that he made in the University of Georgia press release in July of 2005. This is early on, and if I may, I would like to read his quote, where he said: "If the federal grant must end, we are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources." That is the Director of SREL quoted in his own press release, in July of 2005, over two years ago.

Chairman MILLER. Okay. So, you do contend today that if Dr. Bertsch sits at that chair, and swears an oath to tell the truth, and says that no one ever told him that SREL going forward would receive no more than $1 million in base funding, and that all of the funding would come from competitive grants. He would not be testifying truthfully.

Mr. SELL. Mr. Chairman, I am going to kindly resist the opportunity to sit in judgment on others' testimony. I only desire to tell you what my belief and my understanding is.

WHO WILL FILL SREL'S ROLE?

Chairman MILLER. Okay. Mr. Sell, a lot of the work that SREL was doing before has been described already in your testimony and your answers to previous questions. They include research, supporting regulatory matters, including long-term environmental monitoring, education, outreach work, and helping with the stewardship of this site. What of that work is now being done by another laboratory based upon competition?

Mr. SELL. I do not know.

Chairman MILLER. Is any of it being done by anyone else?

Mr. SELL. Mr. Chairman, I simply do not know. I tried to acquaint myself with the facts. My involvement in this, quite frankly, was very limited. But I wanted to represent the Department well, tried to go back and review the facts, so that I could speak to them, but on that particular question, I simply do not know. But I would be happy to provide that information after the hearing.

Chairman MILLER. Okay. Well, Mr. Sell, we have asked for a variety of documents. When the Department makes grants based upon competition, makes competitive grants, what sorts of documents does the Department generate? It is not oral, is it?

Mr. SELL. Mr. Chairman, it is not my desire to be evasive on very sound questions. In my role at the Department of Energy, I oversee an enterprise of 120,000 people, and I have a number of, I have three programmatic Under Secretaries that report to me, and they each——

Chairman MILLER. Okay.

Mr. SELL.—have a number of Assistant Secretaries, which——

Chairman MILLER. I understand.

Mr. HALL. He has already answered the question, Mr. Chairman.

Chairman MILLER. Well, I think that was a long way of saying I don't know, and it is kind of using up my time.

Mr. SELL. Okay.

Mr. HALL. Well, you can grant yourself more time.

Chairman MILLER. Well, I may. Mr. Sell, is the short answer I don't know.

Mr. SELL. I do know how exactly what types of documents——

Chairman MILLER. Okay.

DOCUMENTS PROVIDED BY SREL

Mr. SELL.—are produced in that effort.

Chairman MILLER. This committee, these two subcommittees have requested virtually all documents that have to do with the decision with respect to SREL. Have any documents been withheld, based upon executive privilege, decisional process privilege, attorney-client privilege, doctor-patient privilege, priest-penitent privilege, any other privilege or any other basis? Has the Department withheld any documents that were described by our request?

Mr. SELL. I don't believe so. It has been my desire, and the desire of our general counsel——

Chairman MILLER. Okay.

Mr. SELL.—to be as responsive as we can possibly be.

Chairman MILLER. Okay.

Mr. SELL. And I will tell you that over 100 individuals, employees of our Department, have searched their e-mail files and searched their files, and we have produced over 25,000 pages of documents on this issue. It is our desire to be completely open and responsive to this committee.

Chairman MILLER. Well, I will accept Mr. Hall's invitation to grant myself some additional time.

If we do not have a document from the Department showing competition for these functions that have been performed in the past by SREL, is it because such documents don't exist?

Mr. SELL. I don't know. We are certainly going to provide you all of the documents.

[The information follows:]

INSERT FOR THE RECORD

WORK OF SREL THAT ANOTHER LABORATORY IS PERFORMING NOW OR HAS BEEN OFFERED UP FOR COMPETITION

In FY2007, the Office of Environmental Management supported tasks at SREL that are critical to the mission of the Savannah River Site, which included research to support monitoring or regulatory needs. Basic science research is not part of the mission of the Office of Environmental Management, so they do not have competitive solicitations in the area of ecological research. As to the matter of environmental monitoring required for regulatory compliance, that work is accomplished by the Department and its cleanup contractors and was not conducted by the SREL in the past. As cleanup is performed, the site continues to work closely to inform, consult, and receive stakeholder input from the community through the Citizens Advisory Board and other public forums.

The Department's Office of Science (SC) does competitive solicitations for basic research in the areas of low dose radiation and environmental remediation sciences. Research supported by SC's Low Dose Radiation Research Program focuses on understanding the biological responses to radiation exposure to help determine health risks from exposures to low levels of radiation. SC's Environmental Remediation Sciences Program focuses on basic research toward understanding the fundamental biological, chemical, and physical processes that control contaminant behavior in the subsurface environment. Both programs fund competitively awarded research at universities and DOE laboratories and announced solicitations for proposals in FY 2006 and /or FY 2007. In addition to the Department's Office of Science, we are aware of the National Science Foundation's research programs offered by their Division of Environmental Biology which has competitive solicitations in the areas of ecological biology, ecosystem science, and other funding opportunities in the ecological arena.

Chairman MILLER. Okay. And do you know if any of the work, again, I think I have asked you this before, but let me ask it again. Is the work previously done by SREL, research, supporting environmental, and supporting regulatory matters, long-term environmental monitoring, education, outreach, help with stewardship. Are those being done by someone else?

Mr. SELL. I do not know.

Chairman MILLER. Okay. All right. I will stop yielding myself such time as I may consume, and recognize Mr. Lampson for his second round of questioning.

SREL BUDGET

Chairman LAMPSON. Thank you, Mr. Chairman. I was referring earlier to, we were talking about a memo, May of 2005. I went and looked at the memo, and it doesn't indicate that Headquarters personnel would manage this cooperative agreement.

In fact, it actually states that the site personnel would do it. And it says in here, supporting, quoting, I am reading from it, on the second page: "Supporting this agreement would only involve existing federal employees at SRS to administer the cooperative agreement. There would be no measurable additional costs. It doesn't say in here what we, what you have been telling us that I would say, that they would, the Headquarters would be, was aware, and had sent notice, and they were trying to cancel it."

What do we interpret from this?

Mr. SELL. Mr. Lampson, I think you are trying to ask me something I just don't quite know how to respond to.

Chairman LAMPSON. But is there clear guidance on the part of the Secretary for this, of this deal? Is there clear guidance to SREL?

Mr. SELL. Once again, I will tell you my understanding of what was contemplated by the Secretary, is that SREL would receive $4 million of base funding in Fiscal Year 2006, $1 million in base funding in Fiscal Year 2007.

Chairman LAMPSON. And we understand that, but there is no indication——

Mr. SELL. Additional money as the program found responsive and appropriate and meritorious, and to the extent they had funds available.

Chairman LAMPSON. Okay. There is no mention of an agreement by anyone, by Georgia, that the lab would become self-sustaining in two years, and what it does say in this same memo, were that we ask that you approve going forward, if three conditions are met. One, the University of Georgia Lab Operator must agree to the reduced level of funding, and agree to not seek Congressional earmarks in 2006 and 2007.

Mr. SELL. The Members from the South Carolina and Georgia Congressional delegations would need to give their assurance that they would seek to have the language struck from the House Energy and Water Development appropriations bill that adds $5 million to the Science budget for SREL through the exploitation of the current contract on June 30 of 2006. The Congressional delegation would need to assure the department that they would not seek Congressional earmarks in 2006 and 2007 for SREL. Again, there is clear guidance, not a mention of these things that they would do in order to know what their future was going to be, and how to operate. We wanted them to make a transition, then they would have at least some indication that they were supposed to be transitioning from what they had been operating on. That is not in this memo, and there is not another document that I have seen or that we know about, that gives that clear direction.

Chairman LAMPSON. It is mentioned in letters dated in June of 2007, in response to some questions that we have asked, that you are saying that those things occurred, but there is no proof of it. So, how are we to understand what was going on then, as compared to what somebody says they think was happening now?

Mr. SELL. Mr. Lampson, you have my testimony, and you will soon have the testimony of my colleagues. You have our statements of what we believe was agreed to in May of 2005. You have the contemporaneous statement of the Director of SREL in July of 2005, where he says: "If the Federal Grant must end, we are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources." You have that agreement memorialized in the December 2006 cooperative agreement.

I said at the outset I do not want to suggest that we have been perfect. I do not want to suggest that we couldn't have handled this better. But that is, I believe, the evidence of the agreement that was made in May of 2005.

Chairman LAMPSON. So, they are not going to, what their direction was, was to move from $8 million to $4 million, and find the difference in that?

Mr. SELL. I am sorry.

Chairman LAMPSON. The budget—could mean that Dr. Bertsch was going to try to find the difference between the $8 million and the $4 million.

Mr. SELL. To the extent that the lab would need additional base funding, it was our belief that that would either come from the University of Georgia or other sources outside the Department of Energy.

Chairman LAMPSON. And how, and they were given notice, clear notice, and a year to make that transition, to come up with the money?

Mr. SELL. Mr. Lampson, I believe that they were given clear notice and two years.

Chairman LAMPSON. Okay. I yield back my time, but we will try to continue this in a minute.

Chairman MILLER. The Chair recognizes Mr. Sensenbrenner for five minutes.

GUARANTEED FUNDING SOURCES

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman. Let me say that this entire testimony shows how difficult it is to wean entities from guaranteed funding, whether it is called non-competitive grants in the executive branch or earmarked here in the legislative branch. There is no question in my mind that SREL has done good work, but it seems to me that they ought to be on the same equal playing field as others who have done good work in determining where the money for each of the ensuing fiscal year goes and if their application is better than somebody else's, then they get funded and if they don't, if it isn't, then they don't. And it seems to me that if we want to get better science out of the research dollars that the Congress appropriates, the competitive system is best and that means that we need to get away from guaranteed funding sources, whether they be through Congressional earmarks or bureaucratic decisions. I yield the balance of my time to the gentleman from Texas, Mr. Hall.

ARTICLE FROM THE UNIVERSITY OF GEORGIA

Mr. HALL. Let me ask you, you have testified and quoted an article from the University of Georgia faculty and staff newspaper; that is their Office of Public Affairs and it is called Columns, right?

Mr. SELL. That is correct.

Mr. HALL. And the date of that was July 11, 2005?

Mr. SELL. Yes, sir.

Mr. HALL. And you quoted, in part, and let me ask you if this was the lead-in from, and I will read it to you and if you will follow me with what you have there, quote on Page 2, "From its inception, SREL has been a UGA research unit recognized for the effectiveness in conducting independent research on the impacts of Savannah River Site operations," says Paul M. Bertsch, SREL Director. Again, "It has been an independent and credible source of information on environmental issues relating to nuclear materials production and processing and it is known worldwide as a leading ecological environmental laboratory."

And this, again, Dr. Bertsch saying this on that date, on July the 11th, 2005, "We are so sorry to see these fine staff members lose their positions, but if the federal grant must end, we are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources." Those are Dr. Bertsch's words, aren't they?

Mr. SELL. Those are his words——

Mr. HALL. To put them into their own newspaper and their own press release?

Mr. SELL. Yes, sir.

Mr. HALL. I yield back.

Chairman MILLER. Mr. Hall, you have just yielded Mr. Sensenbrenner's time and now you are entitled to five minutes of your own. Do you wish to use them?

Mr. HALL. Well, let me think about that just a minute to see if I've got anything else I can read to you. Yes, I think he has done a very good job of answering most of the questions and you have been generous with your time. I will yield back to you.

Chairman MILLER. Mr. Inglis, he didn't yield to you, so you just get five minutes.

Mr. INGLIS. And Mr. Chairman, I don't know if we agreed to have another round or are you——

Chairman MILLER. Yes, we did.

Mr. INGLIS. I really have——

Chairman MILLER. But that time is gone forever.

Mr. INGLIS. I really have no further questions. I think it is getting pretty clear here, but Mr. Sell, if there is anything that has come up so far that you would like to elaborate on, maybe I will ask you an open-end question, see if you want to add anything at this point.

Mr. SELL. Thank you, sir, but I will try to stand by what I have said.

Mr. INGLIS. Yes, I think it is getting pretty clear where we are here and I yield back, Mr. Chairman.

Chairman MILLER. Thank you. I now yield to myself five minutes for a third round of questioning. Dr. Sell, again, we——

COMPETITION FOR TASKS PERFORMED BY SREL

Mr. SELL. I don't belong in such distinguished company.

Chairman MILLER. I understand that supposedly there was to be competition, but from what your testimony, there is no evidence of competition for any of the tasks that were performed by SREL, all of which has seemed to have been accepted by the Department. Environmental characterization, ecological risk and effects, remediation and restoration, external grants and contracts. Well, that is the source of funding. Infrastructure. Environmental characterization, this is task funding. Environmental characterization, ecological risk and effects, remediation and restoration, has there been any request for competition for these tasks that SREL contemplated would be subject to task funding on a competitive basis?

Mr. SELL. Mr. Chairman, I just——

Chairman MILLER. Well, is there somebody else who might testify later that I should ask these questions?

Mr. SELL. I believe that there is. I will tell you again that I have looked at this and I have made myself comfortable that the process that was run by Assistant Secretary Jim Rispoli and his team was appropriate. I am comfortable with the decisions that they came to. As to exactly how and why they came to the particular programmatic funding decisions, I am not the best one to speak to that and I would ask that you allow the subsequent departmental witnesses to testify to that.

ENVIRONMENTAL CHARACTERIZATION WITHOUT SREL

Chairman MILLER. I look forward to that with eager anticipation, Mr. Sell. Do you know if the Department ever considered if SREL ceased to exist at that site, what the costs would be of doing environmental characterization, ecological risk and effects, remediation and restoration, the work they had previously been doing and done by SREL?

Mr. SELL. I think good management would require any manager to contemplate what a future without SREL would look like. It is our hope that that doesn't come to fruition, but I assume that our folks have thought about that and have made judgments about where else they could get the services that they need in order to carry out their mission at the site.

Chairman MILLER. Has there been a cost benefit analysis of the consequences of SREL closing?

Mr. SELL. I do not know.

Chairman MILLER. But if there was a cost benefit analysis, would it be the practice of a $23 billion department to have that in writing in some way?

Mr. SELL. Well, this year our experts, and these are folks that know what they are doing, many of them are career employees of our department who I have a lot of confidence in, and over the course of this past year they determined that $1.2 million of work, in addition to the base funding, is what they wanted from SREL. I would argue, and I believe, that paying $1.2 million for $1.2 million worth of work is better than paying $8 million or $4 million for $1.2 million worth of work.

Chairman MILLER. Unless the lab that is doing it ceases to exist because it can't exist on $2.2 million.

Mr. SELL. Mr. Chairman, SREL is an outstanding institution and they have done a lot of good work for us. I think it would be a mistake for the Committee to come to the conclusion that they represent some unique capability that is not resident at the ecology department at the University of Georgia, that is not resident at Lawrence Berkeley National Lab, that is not resident at the University of Tennessee or the University of South Carolina or other entities.

MORE ON SREL COMPETITION

Chairman MILLER. Mr. Sell, have any of those other entities been invited to compete for the work done by SREL? Is there a document that shows that?

Mr. SELL. I do not know.

Chairman MILLER. Would there be documents? Is the Department of Energy, a $23 billion department, does it decide these things by a couple guys in an office talking or do you put it in writing?

Mr. SELL. Once again, the exact manner that these competitions take place, it is not my belief that it is two folks sitting in an office talking.

Chairman MILLER. Okay.

Mr. SELL. The exact details and documentation associated with that, there are others that know far more about that than I and I just don't want to misspeak about what I don't know.

Chairman MILLER. Well, is there somebody who will testify later today who can tell us about what documents exist within the Department and what documents the Department has produced, because we don't have any documents that show a cost benefit analysis of SREL ceasing to exist. We don't have any documents at all to suggest that the work previously done by SREL, environmental characterization, ecological risk and effects, remediation and restoration, that any of those have been presented for competition by other entities. What am I getting wrong if I assumed from that fact that we have no documentation, having asked for it and then assured that we had been given every document that is responsive to our request? What is wrong with my assumption just because such documents do not exist, because, in fact, there has been no competition and there has been no cost benefit analysis?

Mr. SELL. Mr. Miller, I hope you assume from that based on the cooperative agreement that was signed by the relevant parties in December 2006 that the Department of Energy would provide additional funding to the Savannah River Ecology Lab based on need, based on the merit of the proposals and based on the availability of funding. And that would be a determination made by the Department of Energy based on what they—the experts at the Department of Energy—believe to be mission critical. That is what is contemplated in the cooperative agreement and I believe that our team at the Department has complied with that agreement and has kept its commitment and has done it in a good faith manner.

Chairman MILLER. And the December 2006 agreement does not delineate, does not list the work to be done by SREL, does it? Does it list all of these?

Mr. SELL. Okay.

Chairman MILLER. Does it list specifically?

Mr. SELL. A dangerous question for me to not answer directly, since I did ask that you put the agreement into the record, but I will admit, Mr. Chairman, I did not read the full text of the cooperative agreement, but if it is in there, the evidence will show what is in the cooperative agreement.

Chairman MILLER. The Chair yields back. Excuse me, the Chair has exceeded its time. Mr. Lampson is recognized.

ENVIRONMENTAL RESPONSIBILITY TO LOCAL COMMUNITIES

Chairman LAMPSON. Thank you, Mr. Chairman. If there is no one at the lab, it would be hard for them to apply for those grants. We will get into that. I know you are familiar with the Department's strategic. Strategic Theme Number 4 in the plan is environmental responsibility. Goal 4.2, Managing the Legacy, lists five strategies to achieve this goal. The first strategy is to protect human health and the environment through surveillance and maintenance activities that verify workable environmental remedies.

We had two witnesses at our last hearing and one here today who told our Subcommittees that these activities are a part of SREL's work and that SREL has played an important role in verifying the safety of the site. SREL reviews and contributes to the long-term monitoring and protection of the site and their work has enabled the site to choose less expensive and destructive clean-up remedies.

Second strategy is to preserve, protect and ensure accessible of legacy records and information associated with current and historical site and facility operations. Well, SREL has monitored and maintained records of animals, plants and ecosystems on this site for decades, since it was constructed. It doesn't appear that defunding the lab will protect the valuable legacy record and information about the site.

The third strategy is to optimally reuse lands, ensuring that human health and the environment are protected and that regulators and the community are involved. Mr. Sell, people from the local community and from the broader scientific community have contacted our committee. A local citizens advisory board has contacted the site and your department and they want this lab funded and working on this site. Your Department has ignored their wishes and basically shut them out of this decision. I don't call that involving the community.

So I don't see how the Department can claim SREL is not a good investment or that its work is not in line with the Department's missions or its strategic goals. Can you explain to the Committee why funding this lab is not appropriate and second, these are your Department's goals and strategies, right?

Mr. SELL. I believe those are our Department's goals and strategies. If I may respond to a number of—your question was long and you said a number of things. One of them, that we ignore the wishes of our local communities and our citizen advisory board and we do not ignore their wishes.

Chairman LAMPSON. Are you granting their wish to——

Mr. SELL. Mr. Lampson, just because you don't ignore doesn't mean you grant every wish that is out there and I can guarantee you that our citizens advisory boards around every one of our sites around the complex have many, many wishes that we simply don't have the funds to accommodate and it requires tough management choices and there are entities in each of your Congressional districts——

Chairman LAMPSON. Aren't the funds available for this? You have the funds for this. You are choosing not to use them.

Mr. SELL. Environmental Management has over $6 billion in funds and we are choosing, let me be very clear, to put dollars on higher priority items.

Chairman LAMPSON. Against the wishes of that community. And that was what my question was.

Mr. SELL. Well, can I finish answering the question? There are entities that come to us, as they come to you, and say we have services that are perfectly in line with the Department of Energy's mission and give us money. We have thousands of such requests that come to us and we have to evaluate all of those. What we try to do, if we are good managers, what we succeed in doing is we make a judgment. Do we need this? Is their proposal meritorious? Do we have funds available?

The Savannah River area citizens have asked us to increase money for cleanup, they have asked us to bring new missions there, they have asked us to do a number of things and we take those concerns and those requests very seriously because the Savannah River Site community, Aiken, South Carolina; North Augusta, Georgia; and the surrounding areas, we consider to be an important partner and a great enabler for us to carry out our mission. We have to deal honestly with them and we have to deal fairly with them and we do not have enough resources to do every single thing that they want. We have to set priorities and we seek to make the difficult decisions that allow us to fund those priorities.

BUDGET ALLOCATIONS

Chairman LAMPSON. Do you know where those $4 million will be placed in the Department, how they will be used?

Mr. SELL. We will spend $1.2 billion, roughly, on cleanup activities at the Savannah River Site and I am sure we can provide—I can't recite to you exactly how every dollar will be spent, but that is information we are more than happy to provide to the community.

Chairman LAMPSON. Okay. Of the $1.2 billion, $4 million is not a huge amount to meet the strategy that is put forth in the goals that you and the community wanted to accomplish.

Mr. SELL. Mr. Lampson, I believe it is a huge amount. It is a huge amount, particularly if there are other more important needs that would go unfunded if we did that.

Chairman LAMPSON. I was going to give you an example of what is—our suppression, for example, are a more important priority than those that are listed in this explanation.

Mr. SELL. Mr. Lampson, I cannot make that judgment.

Chairman LAMPSON. Okay.

Mr. SELL. I leave it to our program officers and our experts to make the judgments on what are the appropriate priorities given the overall guidance, budgetary guidance, provided by the Secretary and they made this judgment.

Chairman LAMPSON. Mr. Rispoli didn't know about that—the fire needs, apparently, and maybe there are others—it is a site decision. Let me yield back my time at this point.

Chairman MILLER. And the amount of time being yielded back is negative one minute and 30. Mr. Hall for five minutes.

Mr. HALL. Mr. Sell, thank you for your testimony and you almost told us exactly how you come to these decisions. You call these people, you have people that you have great respect for that you have gathered around you. You have long time men and women who are professional members of the Department of Energy, have been there many years. You call on their—and as you said, you get to the end and we make a judgment. That was your testimony, wasn't it?

Mr. SELL. Yes, sir.

MORE ON SREL FUNDING

Mr. HALL. In 2005 the Office of Science had done that and made a judgment and they made the judgment to cut the funding for the lab after they were faced with some different and very difficult budget choices other than the choices of selecting this lab. Somebody made the decision to cut it.

Mr. SELL. That is correct.

Mr. HALL. And you didn't make that decision, did you?

Mr. SELL. I was not a part of the Department of Energy at that time.

Mr. HALL. And after learning that SREL funding for fiscal year 2006 had been zeroed out, isn't it a fact that Charlie Anderson—he is going to testify here in a little bit—took it upon himself and Jill Sigal to secure enough short-term funding to keep this good lab open, that they urged that upon Mr. Bodman. You have that knowledge, don't you?

Mr. SELL. They did make that recommendation to Secretary Bodman and he accepted it.

Mr. HALL. Did they make it in writing? Mr. Chairman is logically a great searcher for something in writing. Is there something in writing between them to Mr. Bodman? Did they have to submit him an e-mail or whatever you guys do over there?

Mr. SELL. There is an internal memorandum, which I believe has been made available to the Committee, reflecting their recommendation.

Mr. HALL. All right. And I guess if they didn't have it, they would be saying something right now, so they probably have it. But they submitted that to you or to someone else to go back——

Chairman LAMPSON. Mr. Hall, would you yield just one second?

Mr. HALL. I will in a minute. To Mr. Bodman and urge him to keep the lab open to the tune of $4.3 million for fiscal year 2006 and a million for fiscal year 2007, and Mr. Bodman apparently was swayed by these two and others under them because he did agree to it.

Mr. SELL. He did agree to it.

Mr. HALL. And while these figures were below prior funding level, the starting point was a zero because they had been cut out, so these folks went with what they could get, got the most they could get to get this funding going. Now, the starting point was zero and all the interested parties, DOE, SREL, UGA and the Georgia and South Carolina delegations agreed to them.

Mr. SELL. That is my belief.

Mr. HALL. And don't you find it difficult to believe that the director of SREL didn't know about that?

Mr. SELL. I believe that he did know about it.

Mr. HALL. And I think, then, it is clearly their hope that this additional time would give them time to seek outside funding to where they could become independent and that was your hope.

Mr. SELL. It was certainly our hope and it continues to be.

Mr. HALL. I really thank you and I now yield to you. Don't ask me anything——

MAY 20TH MEMO

Chairman LAMPSON. No, I am not going to ask you anything. I just wondered, you referred to the memo, you said we would be bringing it up if we had it. This is the memo. I was quoting from it earlier and it does not have any mention of those things in this memorandum of May 20 of 2005. I yield back.

Mr. HALL. Well, let me give you one because I sure want you to have it. I give you the only copy I have got of the July 11, 2005 Columns, University of Georgia faculty and staff newspaper that quoted—are we not talking about the same thing?

Chairman LAMPSON. That is a DOE document, right? Newsletter?

Mr. HALL. You don't have the document listed by Jill Sigal and Charlie Anderson in the background asking Secretary—it is dated, let me see. May 20 of 2005.

Chairman LAMPSON. The May 20th memo? That is this memo right here that I have been quoting from. There is no mention of these things in that three-page document.

Chairman MILLER. It is my fervent hope that we can get in Mr. Inglis' round of questioning and then we could excuse Mr. Sell.

Chairman LAMPSON. I yield.

Chairman MILLER. And everybody has yielded back.

Chairman LAMPSON. I am through.

Chairman MILLER. All right. Mr. Inglis for five minutes. And don't feel like you need to use it all.

GOVERNMENT VERSUS THE PRIVATE SECTOR

Mr. INGLIS. Just very quickly. It is interesting to note here, the Chairman asked a number of questions about the cost benefit analysis and would it be in writing and things like that, and that is somewhat understandable because we are government. It strikes me as not the way the private sector acts and we are always trying to figure out a way to run government more like a business. I can't imagine many businesses sitting around and documenting, in study after study, a cost benefit analysis about whether they can go get some service provided more efficiently somewhere else and not see the need, not take the time to work up a written cost benefit analysis.

It is just really interesting that we are here studying that so much. It is because we are government, I guess. We got to do that. But the private sector moves quickly and they accomplish things quickly. We in government go so slowly because we are trying to document all those things and the result is people get frustrated with us. And so here we have before us, Mr. Chairman, both Chairmen, some folks who move with some relative speed, for government, and now they are hauled before Committees to explain themselves and it is just really—it should be a real picture to us about why it is that government is inefficient and the private sector is so much more efficient.

And when somebody tries to bring those principles to government, they get whacked. And so that is sort of the way it goes, I suppose, but also, it is interesting. I think I have got the theory, though, the two Chairmen on the other side, and that is maybe in itself this work isn't being done now. I think that is the theory. I finally hit upon what I think is the reason we have spent all morning here and we will spend the rest of the afternoon here, and that is they think that the work just isn't being done and some sinister people in the Bush Administration are trying to stop the work from being done, the environmental work. Do you want to comment on that?

Mr. SELL. I believe and my colleagues sitting behind me can speak more eloquently to this, but I believe that we are doing all of the work that we can get done, based on a priority basis, with the funds that we have available. That is my belief.

Mr. INGLIS. Thank you, Mr. Chairman. I yield back.

Chairman MILLER. Mr. Sell, I think we are done. I appreciate your testimony today. I look forward to the many questions that you have left for other members of the staff, the other employees of the Department of Energy. We now have another vote. I had hoped that it would actually be a vote on the rule, which is a real vote, but no, it is another obstructionist vote. But we need to go vote and when we come back, we will begin Panel II. Thank you.

[Recess]

Chairman MILLER. Members are trickling in, so we can begin again, if we are ever going to get through this hearing. We will now begin our second panel and I would like to introduce our second panel. We welcome the distinguished Georgia Power Professor of Environmental and Chemistry at the University of Georgia and the former Director of the Savannah River Ecology Lab, SREL, Dr. Paul Bertsch, a distinguished researcher and administrator and the Subcommittee is honored to have him with us.

Our second witness is Ms. Karen Patterson, Chair of the Citizens Advisory Board for the Savannah River Site. Ms. Patterson will discuss the board's activities as they relate to the funding of SREL and the board's review of the role of SREL on the Savannah site. Our witnesses should know we limit testimony, we encourage witnesses to limit their testimony to five minutes, after which the

Members of the Committee will have five minutes each, also sometimes observing the breach. It is our practice to put witnesses under oath. Do either of you have an objection to being sworn in? You also have the right to be represented by Counsel. Do you have Counsel with you? If you would raise your right hand.

[Witnesses sworn]

Chairman MILLER. Thank you. Dr. Bertsch, you may begin.

Panel II:

STATEMENT OF DR. PAUL M. BERTSCH, FORMER DIRECTOR, SAVANNAH RIVER ECOLOGY LABORATORY, UNIVERSITY OF GEORGIA; GEORGIA POWER PROFESSOR OF ENVIRONMENTAL AND SOIL CHEMISTRY

Dr. BERTSCH. Thank you, Chairman Miller, Ranking Member Sensenbrenner and Subcommittee Members. I would like to thank each of you for your dedication and commitment and to the U.S. science enterprise. I know that you are well aware that scientific discoveries spawn technological innovation, which is the engine driving the U.S. economy, as well as leading to the advances of the quality of life of all Americans.

I wish I were here this afternoon to speak with you about remarkable scientific achievement at the Savannah River Ecology Laboratory, how these result in significant savings of taxpayers' dollars as well as ensuring the quality of life for Georgians and South Carolinians. Instead, I have been asked to provide you with background and facts supported by written documents that led to the loss of DOE funding for SREL. These facts are in direct conflict with what has appeared in letters from DOE officials to Chairman Miller and Chairman Lampson, and in statements by DOE spokespersons to the media.

My written testimony details the events leading up to the funding impasse and provides the documentation to support the written testimony. I would like each of you to examine this testimony. Bottom line is, as a result of unusual and extraordinary actions on the part of DOE headquarters personnel, about a third of all SREL employees received termination letters at the end of January. Many other separations will occur in the upcoming months. In the absence of funding from the Department of Energy, it is likely that the Savannah River Ecology Laboratory will be closed, as indicated in a recent letter from President Michael Adams of the University of Georgia to Secretary Bodman.

Thus, the unique 56-year-old laboratory with a long institutional memory about the SRS and its operations and impacts in a lab that plays an important role in generating information needed for human and ecological risk assessments, for the development and implementation of novel remediation strategies and for ensuring the long-term stewardship of the 310 square mile SRS reservation will be lost. While the human costs associated with involuntary separation of employees is always difficult, it is particularly tragic in this instance. SREL employees are extremely dedicated individuals who are committed to their important work. SREL employees who are terminated continue to complete their research and organize their data so it will not be lost forever.

The SREL support staff is equally dedicated as they feel directly connected to the important work conducted by SREL researchers and are proud that they enable the internationally acclaimed research accomplishments of their colleagues. The closure of the Savannah River Ecology Laboratory will be felt by the Savannah River Site as DOE program managers, contractors and regulators, who have relied on SREL's data for decades.

This unfortunate and totally preventable event is especially troublesome to the general public in the central Savannah River area, as well as those living in downriver communities who have come to rely on the open and independent evaluation of the impacts of SRS operations on the overall environment. This looms especially large as the SRS enters a new phase of plutonium processing for disposition of excess stockpiles while at the same time planning to place significant quantities of reclassified high-level radioactive waste. Finally, as the status of Yucca Mountain continues to be uncertain, vitrified high-level waste being generated at the SRS appears destined to remain stored on the SRS well into the future.

Events described and documented in my detailed written testimony reveal contradictory direction on the part of DOE headquarters personnel, leading to the funding impasse of the SREL cooperative agreement. Mr. Jeffrey Allison, the SRS site manager, was clearly charged in the 2005 June memo from Mr. Charles Anderson to work with me and my staff to define the scope for a new cooperative agreement. Until May 7 of this year, Dr. Carl Sturgeon, then SREL associate director, and I were consistently told by the SRS management and program staff, that SREL's work was important, that there was a need for the work and that there was sufficient funding to support the work.

In my 23 years at SREL, all cooperative agreements and contracts have been developed with the SRS site manager and program staff and there has never been involvement from DOE headquarters of this magnitude. In fact, Article 29 of the Cooperative Agreement states, "Evaluation, analysis, assistance and approval required by this agreement shall be accomplished at the DOE's Savannah River operations office." These facts, along with DOE regulations that allow the manager to authorize procurement contracts, up to $5 million without review, as well as the obvious fact that SRS program personnel are in the best position to understand site needs, led me to believe that SRS management and program personnel were responsible for deciding what should be funded and at what appropriate level.

Finally, even if one were to condone DOE headquarters' role in developing and controlling a task funding process and making decisions on tasks as small as $30,000, any reasonable individual would believe that a process whereby the outcome is revealed seven months in the fiscal year is fair or makes good business sense. Operative agreements, which are different from contracts in that there is a public purpose for the proposed work, function through cooperation of the parties entering into the agreement.

A very productive DOE/UGA partnership has functioned as a result of the mutual respect and trust. Recent actions by individuals in DOE headquarters surrounding the execution of the SREL cooperative agreement or lack thereof, have undermined this long-standing and productive relationship. Mr. Chairman, I see that my time has expired. I thank you for this opportunity to testify before this joint hearing.

[The prepared statement of Dr. Bertsch follows:]

PREPARED STATEMENT OF PAUL M. BERTSCH

Chairman Miller, Chairman Lampson, Ranking Member Sensenbrenner, Ranking Member Inglis, and Subcommittee Members: thank you for inviting me to testify on this important and most unfortunate situation. My name is Paul Bertsch and I am a Professor of Environmental and Soil Chemistry at the University of Georgia (UGA) and former Director of the Savannah River Ecology Laboratory (SREL), a research laboratory located on the Savannah River Site (SRS) near Aiken, SC and operated by UGA through a cooperative agreement with the U.S. Department of Energy (DOE). The SRS is a former nuclear materials production and processing facility that now has primary missions in environmental cleanup, including the processing and stabilization of high level radioactive waste, as well as in tritium processing and plutonium disposition.

SREL is the quintessential interdisciplinary research lab founded in 1951 by the late Dr. Eugene Odum, widely regarded as the father of modern ecology. The mission of SREL from the very beginning has been to provide an independent assessment of SRS operations on the environment and the mission is accomplished through a program of research, undergraduate and graduate student training, and environmental education and outreach to the general public. The diversity of scientific backgrounds represented by SREL's research staff is a manifestation of Dr. Odum's vision for the field of ecology, i.e., the discipline of ecology represents the intersection of the physical, biological, earth, and mathematical sciences. As such, SREL is recognized internationally by a range of scientific communities and, thus, looms much larger than its relatively small size in terms of notoriety and scientific impact.

The events leading up to the recent budget crisis represent, in my view, unusual and remarkable actions by the DOE managers that have had very unfortunate consequences for SREL and its dedicated employees. The outcome also has very unfortunate consequences for citizens of communities surrounding the SRS and the rapidly growing down-river communities in GA and SC that rely on the Savannah River and the Middendorf aquifer as critical natural resources. The tremendous community support for SREL that has been manifested in letters and editorials in local newspapers as well as in e-mails and phone calls to elected officials and DOE agency representatives has been both overwhelming and humbling.

I have been asked to provide you with the background and facts, supported by written documents, that led to the current funding crisis; facts that are seemingly in direct conflict with what has appeared in letters from DOE officials to both the I&O and E&E Subcommittee Chairs and in statements by DOE spokespersons to the media.

The events began in the spring of 2005 as the President's FY06 budget request to Congress, eliminated all funding for SREL, which at the time was funded through DOE's Office of Science. This happened despite the fact that, in the same budget request, the performance-based budgeting documentation justifying the FY06 request for the Environmental Remediation Sciences Division (ERSD) in the Office of Science listed SREL studies as two of the seven major accomplishments for FY04. This represented almost 30 percent of the performance-based indicators generated by an organization that received less than seven percent of ERSD's budget. The response from stakeholders representing a broad cross section of the general public, regulators, community leaders, and elected officials was prompt and forceful, resulting in many front page articles, editorials and letters in support of SREL.

In the ensuing months, I worked with UGA administrators and elected officials from GA and SC as well as DOE and NNSA officials to get funding restored for SREL in FY06. Following numerous meetings and exchange of documents delineating the role and importance of SREL's work at the SRS that extended for more than two months, a meeting with Ms. Jill Sigal, then the DOE Assistant Secretary for Congressional and Intergovernmental Affairs was arranged. In addition to Ms. Sigal, the May 11, 2005 meeting included staff members from the offices of Senator Chambliss (R–GA), Isakson (R–GA), Graham (R–SC) and DeMint (R–SC); staff from Representatives Norwood (R–GA), Kingston (R–GA), Barrett (R–SC), and Wilson (R–SC); several UGA administrators; representatives from UGA's Government Relations Office, including advocates from the Washington D.C. based McKenna Long Aldridge; Dr. James Decker, Principal Deputy Director of the Office of Science; and me. The meeting began with Mr. Chambliss' chief of staff summarizing the issues relative to the zeroing out of SREL funding in the President's FY06 budget request and the concern by the joint delegation relative to the negative impacts this action would have on their constituents.

Following this discussion, I spoke about the importance of SREL's work to the SRS cleanup mission, long-term stewardship, end state vision, and support of new missions as well as the impact of SREL's environmental education and outreach programs. I also discussed how the various SRS stakeholders including members of the general public and State and federal regulators relied on SREL for independent information concerning the impacts of SRS operations on the environment. I also spoke about the impact SREL's research had on a number of scientific fields. At the end of this discussion, Ms. Sigal asked me about SREL's contracts and grants from other agencies, private foundations, and industry. I spoke about the large increase in funding from outside sources SREL had experienced over the past several years and to our plans to increase this funding in the future. Ms. Sigal then asked me to describe a funding portfolio for SREL if it were to survive the budget crisis. I indicated that I believed that DOE–SR would fund $2.0–$3.5M a year in projects, a point that Ms. Sigal challenged, suggesting that she did not think the SRS valued SREL's work. I respectfully disagreed with Ms. Sigal and spoke to my more than 20 years experience working on the SRS in partnership with DOE program and contractor personnel and to the unique capabilities SREL provided in support of SRS programs and activities as well as the role SREL had in the overall public support of the SRS. I was then asked if Ms. Sigal could speak with anyone in DOE familiar with the SRS that clarify this issue. I suggested that Charles Anderson, formerly from the SRS and now at DOE–HQ would be a good individual to speak with regarding SREL and its role on the SRS. Ms. Sigal suggested that she would be meeting with Mr. Anderson that week and would discuss the issue with him. I then described SREL's ongoing successful efforts at expanding funding from other agencies, private foundations, and corporations and how, based on encouragement from DOE program managers at the SRS and in the Office of Science, this funding was leveraged with the DOE funds to maintain a viable and vibrant research lab despite many years of reduced and then flat funding from DOE. I also described the need for funding SREL infrastructure given that SREL was responsible for maintenance and upkeep of more than 100,000 square feet of office and sophisticated laboratory space in three different locations on the SRS. Ms. Sigal questioned DOE's responsibility for infrastructure support at which time I engaged Dr. Decker in the conversation, believing that, given his experience with facility support by the Office of Science, he would understand my position. Dr. Decker agreed that a responsible landlord and steward was a requirement for keeping sophisticated laboratories vibrant and at the cutting-edge of science.

Ms. Sigal then asked me to articulate this funding portfolio in a two page document and deliver it to her by COB the following day. I generated this document which specifically identified sources of funding for SREL, including $2.0 to $3.5M in project funds from the SRS and $2M in infrastructure support from EM and NNSA, in additional to $2–$3M in outside funding (attachment A). The document was generated and then reviewed by UGA administers and the final version was delivered to Ms. Sigal's office late afternoon on May 12th, 2005. The next information regarding the SREL budget that I received came two weeks later from UGA administrators who told me that the GA delegation received confirmation that SREL would receive $4.3M in funding for FY06, with $3M coming from DOE–SR, $1M from the Office of Science, and $300K from NNSA. While this level of funding enabled SREL to survive, it represented a 47 percent reduction in funding from FY05 and led to a staff reduction of about 30 percent.

On June 27th, 2005, I received a FAX from Senator Chambliss' Office of a memorandum from Charles Anderson, Principal Deputy Secretary for Environmental Management, to Mr. Jeffrey Allison, the DOE–SR Site Manager (attachment B). The memorandum stated **"SREL is important to the Environmental Management (EM) Program and other Department of Energy (DOE) program offices. Research projects will be conducted to address DOE needs as related to cleanup, stewardship, SRS end state, and potential new SRS missions."** The memo went on to direct Mr. Allison to work with me and my staff to develop the scope of the new cooperative agreement to commence July 1, 2006; **"In addition, DOE–SRS is requested to prepare a new cooperative agreement that begins July, 2006 to establish a framework for future SREL activities."** On July 1, 2005, I received a letter from Mr. Allison which captured the major elements of Mr. Anderson's memo in addition to stating that he (Mr. Allison) had directed DOE–SR contracts personnel to begin work on the new five-year cooperative agreement. **"I have directed the Office of Contracts and Management to begin the process**

to renew the cooperative agreement for an additional five years to establish a framework for future SREL activities" (attachment C). At this point I would like to emphasize that at no time was it communicated to me that any element of the funding portfolio document previously submitted to Ms. Sigal needed to be modified in any way or that the document contained unrealistic expectations from DOE's perspective.

Following Mr. Anderson's directive, deliberations leading to the negotiation of the new cooperative agreement commenced in an August 2005 meeting with Mr. Allison and other members of his staff, including Mr. William Spader, Deputy Manager; Mr. Roger Butler, Assistant Manager for Business; and Dr. Karen Hooker, Director of the Environmental Health and Quality, who also served as SREL's Program Manager. We discussed SREL's reconfiguration plan to address the 47 percent reduction in funds and ~30 percent reduction in work force from FY05 to FY06. Mr. Allison was pleased with the plan and the smooth and safe transition, but stressed his interest in SREL maintaining a strong outreach program despite the reduction in funding and staff. We discussed what research areas SREL should focus on given the guidance we received from DOE–HQ. I spoke of SREL's expertise in providing site specific data that could be used in cost avoidance activities such as use of monitored natural attenuation and in developing long-term surveillance and monitoring activities, as well as the work focused on environmental stewardship. Mr. Spader told Mr. Allison the site specific work and long-term surveillance and monitoring activities were very important to the EM closure program. We also discussed a funding level needed to keep SREL viable. I was asked what my understanding was of the Offices of Science's funding for FY07 would be, i.e., was the $1M recurring? I answered that I was sure it was not and while we would continue to pursue grants from the Office of Science we could not expect future funding for the SREL program. I also mentioned that UGA would be reducing its additional investment of state funding beginning July 1, 2007. Mr. Allison indicated that we should plan on a budget of $4M in EM funds in FY07 and, while not making a firm commitment, we should also request additional funds to make up for the decrease in GA State funding for FY08. Mr. Allison directed Dr. Hooker and me to work together to develop the work scope for the new cooperative agreement commensurate with a $4M funding level.

Dr. Carl Strojan, Associate Director of SREL and I met monthly with Dr. Hooker and Mr. Dennis Ryan to define the work scope and other details of the cooperative agreement beginning September, 2005. Early drafts of the CA were passed back and forth beginning in November, 2005. Mr. Donnie Campbell, Contracting Officer for DOE–SR sent a letter to Dr. David Lee, UGA's Vice President for Research requesting a follow-up cooperative agreement (CA) based on FY06 funding base-line for a 12-month base budget year and four 12-month renewal Periods of Performance (attachment D). UGA submitted a final version of the proposed agreement to DOE in February, 2006.

In a March, 2006 budget meeting involving SREL's Administrative Financial Director Dr. Laura Janecek, and Ms. Sarah Blanding, the SRS–CFO, confusion arose relative to DOE–EM's funding level for support of SREL's work in FY07. The CFO indicated that it was her understanding that DOE–SR would be providing SREL $3M for FY07 as in FY06. As this was inconsistent with previous discussions, I sent a letter dated March 26, 2006 to Mr. Allison requesting clarification. I received verbal assurance confirmed by a letter from Mr. Allison dated March 31, 2006 reiterating that DOE–SR would provide $4M in EM funds to support SREL research activities broadly defined in appendix A of the cooperative agreement and more specifically in the 2007 research plan (attachment E). During a visit to the SRS by Dr. David Lee (UGA VP–Research) Mr. Allison reiterated the importance of SREL to the SRS and the intention of DOE–SR to adequately fund SREL to carry out its work. Mr. Allison also acknowledged the difficult reconfiguration process that SREL was subjected to in FY06, praised the reconfiguration plan developed by SREL, and stated "SREL will not close on my watch."

In June 2006, the DOE review of the CA submitted by UGA in February was still not complete and DOE extended the existing CA until September 30, 2006.

The DOE review and negotiations on suggested changes to the cooperative agreement were completed by the end of August 2006. In early September a signing ceremony for the CA was discussed with Mr. Allison and Dr. David Lee and a date in late September was planned. The completed CA was sent to Washington D.C. for 48 hr. notification of Congress and was returned for signing the week of September 4. DOE contracts personnel alerted SREL that they anticipated Mr. Allison's signature on Friday, September 8 and requested SREL to confirm David Lee's availability to sign the CA.

Just prior to Mr. Allison's planned signing the CA, he ordered all DOE–SR contracts be submitted for 72 hr. not 48 hr. notification, which follows a different procedure. Mr. Allison ordered the SREL cooperative agreement to go through the 72 hr. notification process.

During the process involved in 72 hr. notification to Congress many questions began to be raised and DOE–SR began requesting additional information from SREL. Eventually I was told that Ms. Jill Sigal had became involved and was questioning the terms of the CA that had been worked out over the previous year following the guidance provided by Mr. Anderson in June 2005 memo (*vide supra*). I was also told that Mr. Allison was directed not to sign the CA.

In an October 3, 2006 meeting involving Dr. Strojan, Mr. Campbell, Mr. Allison and me, Mr. Allison stated that he was being directed to commit only $1M in EM funds for FY07 and nothing in the out-years of the CA. I indicated that if we were to only receive only $1M in FY07 that I would have to develop a closure plan. Mr. Allison stated that closure not an option; SREL's work was too important to the SRS and EM needed this work. I was directed by Mr. Allison to work with the three EM line organizations on the SRS to "projectize" SREL's work scope defined in appendix A of the CA and specifically in the research plan for FY07. Mr. Allison also volunteered to call Dr. David Lee or Dr. Arnett Mace (UGA Provost) to describe the intention of DOE to fund SREL's work through this alternate funding paradigm and to provide assurance that there would be sufficient support of SREL programs via this alternate mechanism. An additional extension of the CA was required until the end of December 2006, even though SREL only had sufficient funding to operate through the end of November. The delay in signing of the CA attracted attention from the SRS Citizens Advisory Board, the press, and ultimately Congressmen and Senators from both GA and SC. There were several articles in the Augusta, Aiken, and Columbia newspapers.

A meeting was arranged with the assistant managers of the three EM line organizations (Waste Disposition Project (WDP), Soil and Groundwater Closure Project (SGCP), and Nuclear Waste Stabilization Project (NWSP)) Dr. Hooker, Mr. Ryan, other representatives of the three line organizations, Dr. Strojan and me. Mr. Spader opened the meeting stating that SREL needed to work with the three line organizations to "projectize" the work scope in the FY07 research plans. He stated that SREL was important to the EM mission and indicated that the SRS needed to identify $800M in cost avoidance in the upcoming years and that SREL, in addition to executing its role in long-term stewardship, would play a major role in this effort. Mr. Spader then left the meeting. The discussion then turned to focusing on the mechanics of "projectizing" the work scope.

In early November 2006, Mr. Allison told me that SREL should work with program personnel on "projectizing" the work scope demonstrating the mission related nature of the projects. He also indicated that he was no longer going to be involved directly in the process but that Mr. Ryan and Mr. Ben Gould were to be the points of contact.

The funding language inserted by DOE–HQ into the CA continued to evolve and become more complicated throughout October and November 2006. The last version committed $1M in funding from EM for infrastructure and up to $4M in task funding. In another conversation in November 2006, Mr. Allison once again suggested that he would be willing to describe the new procedures for funding SREL's work to Dr. David Lee to verify that sufficient funds to operate SREL would be available in FY07. Given that SREL was going to run out of funds sometime in December, UGA and SREL felt that there was no alternative but to sign the CA with the new complicated funding language and to work in good faith to make the alternate funding model work. The new cooperative agreement was signed in December 2006.

We continued to work in good faith with representatives from DOE–SR to "projectize" the work scope. In late January, 2007 the process was completed and the funding was identified (~$3M including $391K provided by the contractor in FY06). The new funds could not be transferred until the continuing resolution for the FY07 budget was resolved. SREL was told that while DOE–HQ would not be involved in these FY07 funding decisions, they would likely commence a review of the FY07 projects and guide decisions for FY08. SREL and DOE–SR program staff were urged to begin work on the FY08 projects. This process was begun in early February 2007. SREL was contacted the week of February 12, 2007 and told that project funding was to be transferred to SREL's CA.

In a February 20 meeting, Mr. Allison announced that, as part of the planned DOE–SR restructuring, SREL would now report to the Assistant Manager for Closure Projects, Ms. Yvette Collazo and that he would be handing off day to day responsibility of the SREL program to Ms. Collazo. I discussed my frustration with the inefficiency of the process for "projectizing" SREL's work scope and that having this completed five months into the FY made planning virtually impossible. Mr. Allison indicated that this was the first time through and he agreed that we needed to streamline the process. Mr. Allison then left the meeting turning it over to Ms. Collazo. Ms. Collazo then announced that she had just participated in a conference call with DOE–HQ and stated that they intended to "peer review" each project for *FY07* to evaluate the "mission critical nature" linked to specific Project Basline Schedules (PBSs) in FY07 prior to release of *any* project funding. I indicated that this was not our understanding and that we had begun work on the FY 2008 projects. Ms. Collazo indicated that she was new to the program and that these were her orders from DOE–HQ and that we needed to get to work on revising the project list for FY07 and link projects to specific PBS elements and demonstrate the "mission critical" nature of the work in FY07. I then asked for clarification on the definition of "mission critical" as well as the nature and the timetable of the "peer" review process. No specifics were available nor have ever been provided. The evolution of the presentation of the tasks beginning with the FY 2007 research plan through the final "peer reviewed" task matrix table can be captured in attachment F, although there were several additional iterations not included in this attachment. In an April meeting with Ms. Collazo, Mr. Mark Gilbertson, Dr. Strojan and me, we were told that the outcome of the peer review of SREL projects would result in no additional funding for FY07 as only those projects funded by the contractor with FY06 funds were deemed mission critical for meeting FY07 goals. This discussion was formalized in a letter from Jeff Allison to me dated May 7, 2007—more than seven months into the FY.

At the end of June ~40 SREL employees lost their jobs and more involuntary separations will occur over the next year as various non-DOE funded contracts and grants end. In the absence of additional funding from DOE, it is likely that SREL will be closed as indicated in a recent letter from UGA President Michael Adams to Secretary Bodman. Thus, a unique 56-year-old laboratory with a long institutional memory about the SRS and its operations and impacts that plays an important role in generating information needed for human and ecological risk assessments, for the development and implementation of novel alternate remediation strategies, and for ensuring the long-term stewardship of the 310 square mile SRS reservation will be lost. While the human cost associated with involuntary separation of employees is always difficult, it is particularly tragic in this instance. SREL employees are extremely dedicated individuals who are committed to their important work. As an example, even with the budget uncertainty this spring, very few SREL employees left for other jobs as they all were dedicated to the institution and they worked hard to ensure SREL's continued success. Some SREL employees who were terminated June 30, 2007 continue to report to work feeling compelled to wrap up their research projects and organize their data so it will not be lost forever. The SREL support staff is equally dedicated, as they feel directly connected to the important research conducted by SREL researchers and are proud that they enable the internationally acclaimed research accomplishments of their colleagues. The closure of SREL will be felt by the SRS, as DOE program managers, contractors, and regulators have relied on the data and information provided by SREL researchers over the years. This unfortunate and totally preventable event is especially troublesome to the general public in the Central Savannah River Area and in the down river communities who have come to rely on the open and independent evaluation of the impacts of SRS operations on the overall environment. This looms especially large as the SRS enters a new phase of plutonium processing for disposition of excess stockpiles, while at the same time planning to emplace significant quantities of reclassified high-level radioactive waste tank residuals. Finally, as the status of Yucca Mountain continues to be uncertain, vitrified high-level waste being generated at the SRS appears to be destined to remain stored on the SRS well into the future.

In summary, the events discussed in my testimony above, backed by written and verbal documentation, reveal what appear to be unusual and extraordinary events along with contradictory direction on part of DOE–HQ personnel leading to the funding impasse of the SREL cooperative agreement. Mr. Jeffrey Allison was clearly charged in a June 2007 memo from Mr. Charles Anderson to work with me and my staff to define the scope for a new cooperative agreement. This process commenced in August 2005 and concluded in August 2006 with a cooperative agreement that was ready to be signed in September 2006, prior to interference from DOE–HQ. Mr. Anderson's June 27, 2005 memo to Mr. Allison directly lifted verbiage from the funding portfolio document that I submitted to Ms. Jill Sigal on May 12, 2005 as guidance for activities that SREL should include in the new cooperative agreement. In the absence of any other feedback concerning the funding portfolio document, it was clear to me that the $2 to $3.5M target for DOE–SR task related work was accepted by DOE–HQ. While the funding language of the CA was changed via DOE–

HQ insistence in the September-November 2006 time frame, we worked in good faith with DOE–SR personnel to projectize our work scope and I believe that DOE–SR personnel were also working in good faith. Until May 7, 2007, Dr. Strojan and I were consistently told by SRS management and program staff that SREL's work was important, that there was a need for the work, and that there was sufficient funding for the work. In my 23 years at SREL all CAs and M&O contracts have always been developed with the SRS Site Manager and program staff and there has never been involvement from DOE–HQ of this magnitude. In fact, Article XXIX of the cooperative agreement on Evaluation, Analysis, Assistance, and Approval states "evaluation, analysis, assistance, and approval required by this Agreement shall be accomplished at the DOE's Savannah Operations Office, Aiken, South Carolina, by the Contracting Officer or his duly authorized representatives." These facts along with my familiarity of Section 8.0 of the Savannah River Operations Office Human Capital Management Systems Manual, Chapter 1, Section 1.1, Rev 2, which states that the Manager can authorize procurement contracts up to $5 million "without review," as well as the obvious fact that SRS program personnel are in the best position to understand site needs, led me to believe that SRS management and program personnel were responsible for deciding what should be funded and at what appropriate level. Furthermore, the notion that SREL submitted proposals that were "peer reviewed" and deemed not supportive of SRS or DOE missions is unsubstantiated by any facts surrounding the events that actually took place. As one can see from examining attachment F, we were asked to transform our research plans developed with SRS program staff to meet SRS needs and objectives and containing sufficient detail into a matrix table where specific tasks were represented by several line descriptors. These matrix tables simply could not undergo a peer review according to DOE's own requirements stipulated in 10 CFR 600.3 for management of cooperative agreements. Furthermore, we were never provided any detail about the peer review process nor did we receive written comments from the peer review. I submit that this is because there never was a peer review actually executed as required by 10 CFR 600.3.

I also want to address claims that we have not been aggressive in pursuing other funding opportunities as stated in letters from DOE to this committee and by DOE spokespersons in the press. SREL scientists currently have $5.25 in current contracts and grants and brought in close to $2.5M in UGA FY07. This is a very strong record of competitive funding for an environmentally focused organization of only 11 faculty members. This meets the target in the funding portfolio document that I submitted to Ms. Sigal in May 2005. Finally, even if one were to condone DOE–HQ's role in developing and controlling a task funding process and making decisions on tasks as small as $30,000, would any reasonable individual believe that a process whereby the outcome is revealed seven months into the FY is fair or makes good business sense?

Once again, I thank you for this opportunity to testify before this joint hearing and I look forward to your questions.

BIOGRAPHY FOR PAUL M. BERTSCH

Paul M. Bertsch is the Georgia Power Professor of Environmental and Soil Chemistry and the former director of the Savannah River Ecology Laboratory at the University of Georgia. He also serves as an affiliate faculty member in engineering at the University of Georgia; an adjunct professor in the Marine Biomedicine and Environmental Center at the Medical University of South Carolina; and as an adjunct professor of Environmental Systems Engineering and Science at Clemson University. His research focuses on the mechanisms controlling the fate, transport, and bioavailability/toxicity of contaminants in the environment and on the development of novel minimally invasive remediation strategies for contaminated sites. Dr. Bertsch has published over 150 articles in environmental chemistry, biogeochemistry, toxicology, and soil physical chemistry and mineralogy and holds a patent for a novel groundwater remediation technology. He has been invited to present his research at scientific meetings, universities, and research institutes world-wide. Among his many professional activities, Dr. Bertsch has recently served on three National Academy of Sciences (NAS) committees dealing with issues in Earth and environmental sciences and currently chairs the U.S. National Committee for Soil Science at the NAS. He has also served on the Scientific Advisory Committee of the Advanced Photon Source at Argonne National Laboratory, and on a U.S. Environmental Protection Agency Task Force developing criteria for natural attenuation of metals and radionuclides. He has been elected a fellow of the American Society of Agronomy and the Soil Science Society of America and has received numerous awards for his research, including two career achievement awards. Dr. Bertsch was recently elected President of the Soil Science Society of America. In addition to the Soil Science Society of America, Dr. Bertsch is an active member of the American Chemical Society, the American Geophysical Union, the Clay Minerals Society, the Geochemical Society, and the American Association for the Advancement of Science.

Chairman MILLER. Thank you for saying that your time was expiring or had expired. Ms. Patterson is recognized for five minutes.

STATEMENT OF MS. KAREN K. PATTERSON, CHAIR, SAVANNAH RIVER CITIZENS ADVISORY BOARD

Ms. PATTERSON. Thank you. Thank you, Chairman Miller. Thank you for inviting me to speak on behalf of SREL. My name is Karen Patterson and I live in Aiken, South Carolina. Many years ago I was a technician and graduate student at the Savannah River Ecology Laboratory. Not quite so many years ago I was a technical support service contractor to DOE's Savannah River. I am the current chair of the Savannah River Site Citizen's Advisory Board, known as the SRS as the CAB. We are the group that Chairman Lampson mentioned in his opening remarks two weeks ago as being enthusiastically supportive of SREL and indeed, we are.

I hope my testimony will convey to you how valuable a resource the public considers SREL to be. My written testimony discusses three areas, but I will limit my comments to two; the value of SREL to the local communities and to the country. Last November the CAB submitted Recommendation Number 240 to DOE, which described SREL as a national treasure. My remarks are based on that assessment. The most common reason one hears for maintaining SREL is that it provided credible support for DOE's assertions. The CAB is sometimes cynical at DOE's pronouncements that all is well. In our experience those pronouncements sometimes minimize information that could lead one to a different conclusion or at least question the full measure of success.

However, when SREL supports DOE, the CAB is confident that the DOE is protecting the environment. The loss of SREL would hinder DOE's ability to convince the public that their own findings are true and accurate. SREL has cataloged vast amounts of long-term research results. Ecological processes occur on a time scale not conducive to short-term study. SREL's long-term databases provide insights into ecological trends that would be impossible to identify otherwise.

Maintaining massive databases is expensive. If SREL closes it is not clear that funds to maintain such databases would be available. With the loss of the databases, 50 years of information on ecological processes would be lost. I believe that nuclear power is safe but my confidence is not shared by everyone. With our need to rely on nuclear energy as a source of electricity, it is imperative that public understanding increase. As the Department of Energy, DOE should appreciate the positive PR that SREL provides for a potentially controversial source of electricity.

SREL has trained generations of scientists who have gone on to train additional generations of scientists, a legacy of education that should not be taken lightly. Not all of SREL's graduate students went on to distinguished careers in academia. Many work in State and national regulatory agencies, run research programs for in-trustee or conservation non-profits, teach science and middle and high schools, provide legal or technical consultation to environmentally sensitive clients, draft environmental protection legislation, write books and generally advocate for the environment. This contribution to our country should not be dismissed as inconsequential.

SREL's outreach programs have turned tens of thousands of young people on to the fun and excitement of science and the environment. At a time when we, as a nation, recognize the vital importance of educating our youth in science and math in order to compete in a global economy, the loss of SREL is an incremental step backwards. SREL is recognized internationally for the support it provides scholars and students from other countries. One can consider SREL scientists to be de facto goodwill ambassadors for the United States. At a time when we need to repair our image abroad, SREL advances international scientific support and cooperation.

Finally, consider that perhaps the real legacy of SRS is not the production of plutonium and tritium or the vitrification of high-level waste or the cleanup of contaminated sites, but the body of ecological knowledge that SREL has amassed in more than half a century of research. Ultimately, that knowledge may prove to be the greatest worth and value to the country.

In conclusion, I would like to put the takeaway from my testimony into the parlance of a MasterCard commercial. Loss of SREL to DOE, $4.5 million. Value of SREL to local communities, DOE, and the Nation, priceless. There is no logical explanation for DOE's decision to eliminate funding for SREL. I am sure the Committee has read the letters, editorials and articles in our local papers and the Popular Science magazines regarding SREL's demise. No informed member of the public supports SREL's closure. The CAB certainly does not support it. I urge Congress to do the right thing; restore funding for fiscal year 2008 and find a way to ensure that SREL's future does not rest on the whims of DOE leadership.

Thank you again for inviting me to speak to the Committee. I very much appreciate your efforts on behalf of SREL and the American public, whose interests are best served by ensuring the lab's continued service to the Nation. Thank you.

[The prepared statement of Ms. Patterson follows:]

PREPARED STATEMENT OF KAREN K. PATTERSON

Chairmen Lampson and Miller, Ranking Members Inglis and Sensenbrenner, Members of the Committee—thank you for inviting me to speak on the value of SREL to the public.

I. Introduction

My name is Karen Patterson, and Aiken, South Carolina has been my home since 1973. From 1973 until the mid 1980's I was a technician and a graduate student at SREL. For approximately five years, I managed a project that characterized biological communities on the SRS for a subcontractor to the current Savannah River National Laboratory. Since 1990 I have worked for TetraTech NUS, an environmental consulting firm. Until 1995 TetraTech NUS was the technical support service contractor for DOE—Savannah River. I currently manage projects evaluating the environmental impacts of nuclear power reactors, including preparing environmental analyses for proposed, new nuclear electric generating plants. I am a biologist, and my entire career has been spent studying nuclear-related impacts, both radiological and non-radiological, on natural systems. While I have received income from SREL and been paid for technical support to DOE in the past, I do not receive remuneration from either at present and have not for many years.

I am the current Chair of the Savannah River Site Citizens Advisory Board (SRS CAB)—the group that Chairman Lampson mentioned in his opening remarks two weeks ago as being enthusiastically supportive of SREL. Indeed we are.

The CAB is a DOE-sponsored, FACA-chartered Site-Specific Advisory Board (SSAB) comprised of 25 citizens. The SSAB charter (Department of Energy Charter for the Environmental Management Site Specific Advisory Board, attached) and the CAB's mission statement (Savannah River Site Citizens Advisory Board Missions & Principles, attached) are to provide advice and recommendations to DOE's Office of Environmental Management regarding environmental clean-up and remediation decisions at SRS. DOE has touted the SRS CAB as one of the best in the complex. Last month we received the federal EPA's *national* "Citizen Excellence in Community Involvement" award for our activities at SRS. The CAB provided only my travel expenses to testify before the Committee. My time, like that of all CAB members, is volunteered.

The demographics of the Board reflect the demography of the affected communities: half are women, one-third are African-American, half live in the counties surrounding SRS, and half live downstream in communities that use the Savannah River as their source of drinking water. These public representatives spend many hours, and dedicate many days, educating themselves about DOE's programs at SRS, particularly the programs for the environmental remediation of the "legacy wastes" produced in our nation's Cold War.

II. Testimony

Two weeks ago Drs. Whicker and Schnoor described to this committee the high regard the academic and scientific communities hold for SREL, and the reasons. I hope that my testimony will impart similar insights of the worth of SREL to the informed public. I will focus on three topics:

- the value of SREL to the local communities
- the value of SREL to DOE and
- the value of SREL to the country.

(i) The value of SREL to the local communities, including those using the Savannah River as the source of their drinking water

As Chairman Lampson stated in his July 17 opening remarks, the SRS CAB most certainly does enthusiastically support SREL. We have been concerned about the funding for SREL for several years, and made a recommendation to DOE regarding SREL funding last November.

On November 17, 2006 the CAB submitted Recommendation # 240 (attached) to DOE asking that DOE fund SREL at a minimum of $4.5MM in the future, and establish permanent funding for the Laboratory. DOE responded (attached) that in future years SREL funding would depend on need, merit and funding availability, and that permanently establishing funding through DOE is not necessary (See DOE response to Recommendation 240, attached).

In the recommendation the CAB described SREL as a "national treasure" for the following reasons:

- the public considers SREL to be an independent and credible source of information about environmental issues at SRS and elsewhere
- SREL's potential to support clean-up and remediation across the DOE weapons complex and throughout the Nation
- the extensive body of knowledge captured in SREL's ecological databases developed over 50 years
- SREL's recognition throughout the world as a leader in the study of radioecology
- the training provided by SREL to young scientists from across the country and around the world.

I would like to expand on each of these statements, as paraphrased from the recommendation.

- *the public considers SREL to be an independent and credible source of information about environmental issues at SRS and elsewhere*

Perhaps the most frequently cited reason for maintaining SREL is that it provides credible, independent support for DOE's assertions that DOE is protecting the SRS environment. The CAB is sometimes cynical of DOE pronouncements that "all is well" in successfully pursuing its Environmental Management programs. In our experience, those pronouncements sometimes overlook or minimize information that could lead one to a different conclusion or, at least, question the full measure of success. However, when SREL provides the CAB with information that supports DOE's conclusions, the CAB believes SREL based on past experiences. The Laboratory has a history of and reputation for doing good, careful, supported research, and of publishing the findings in peer-reviewed technical journals. This process of publication in peer-reviewed journals contrasts with the "gray" literature where most government-funded studies are published. There is no more rigorous test of research findings than independent, informed peer review. The open and public critique of SREL research automatically leads the public to trust the Laboratory's findings. The loss of SREL would inhibit DOE's ability to convince the public that their own study results are true and accurate. In other words, SREL increases the public's confidence in DOE and its mission.

- *SREL's potential to support clean-up and remediation across the DOE weapons complex and throughout the Nation*

Much, but not all, of SREL's research is done at SRS. However, the application of the findings is certainly not limited to SRS, or even to other sites in the DOE complex. SREL disseminates its research findings through presentations at national and international scientific meetings, the publication of research results in scientific journals, and collaboration with scientists at other sites. DOE could and should make available SREL research results across the complex and to other federal and State agencies, and industries.

One particular example may be instructive. Dr. Eugene Odum, who directed field work at SREL over the years and is referred to as the "father of modern ecology," urged scientific study of large natural systems, such as watersheds. DOE at SRS today is pursuing a more cost-effective and integrated cleanup of the Site by pursuing a watershed-by-watershed approach. The approach takes into account the relationship between, for example, groundwater and surface water, and the migration and transfer of compounds in natural systems. DOE scientists "think like ecologists" in part because of the lessons learned from SREL research.

- *the extensive body of knowledge captured in SREL's ecological databases developed over 50 years*

Beginning in 1951 with Dr. Odum and his graduate students perfecting the theory of ecological succession using data collected as the abandoned farm fields on SRS reverted to forest, SREL has collected data and managed vast amounts of long-term research. Ecological processes occur on a time scale not conducive to short-term study, and certainly not to the identification of ecological principles during the life of a doctoral dissertation's research. The databases covering decades, which are maintained by SREL, provide insights into ecological trends that it would not be possible to identify if one looked at data collected over a shorter time frame. Without real understanding of natural systems, we can not manage nor protect our environment. Maintaining massive databases takes effort and is expensive. If SREL closes it is not clear that funds to maintain such databases (let alone continuing the research to add to them) would be available. With the loss of the databases, 50 years of knowledge on ecological processes would be lost—a true waste of important knowledge and past funding.

- *SREL is recognized throughout the world as a leader in the study of radioecology*

SREL scientists, because they had studied the dynamics of radioactive materials in natural systems, were some of the first to study the effects on the environment of the Chernobyl accident. SREL radioecologists are known and their research is highly regarded throughout the world.

I personally believe that nuclear power is a safe industry and is beneficial to our country, but my opinions are not necessarily shared by the general public. Equally significant, many people have limited information about the science and technology supporting nuclear power, its federal regulation, and DOE's responsibility in ensuring adequate energy resources for future generations of Americans. With the United States' need to rely on existing nuclear power plants and deploy additional nuclear energy as a source of "non-carbon" electricity in the near future, it is imperative that public understanding and acceptance increase. Research, such as that done by SREL, increases the public's confidence in nuclear energy as a safe way of producing electricity. As the Department of Energy for the Nation, DOE should appreciate the positive public relations (or "PR") that SREL provides for a potentially controversial source of electricity.

- *the training provided by SREL to young scientists from across the country and around the world*

SREL has trained many generations of scientists, who have gone on to train additional generations of scientists. At any academic institution, or scientific meeting, the “six degrees of separation” to SREL are legion. As Committee Members likely know, “six degrees of separation” refers to the idea that, if a person is one “step” away from each person he or she knows, and therefore, two “steps” away from each person known by one of those people, then no one is more than six “steps” away from any person on Earth. Around the world, the connection between SREL scientists and others is oftentimes only two steps away; it seems almost everyone knows someone who has studied at, or worked with, SREL scientists! Many of the career biologists in the Southeast have studied at SREL in some capacity. Most radioecologists in the country have done research at SREL. This legacy of education should not be taken lightly. The advancement of our nation has been paralleled by our nation’s advancement of educated scientists.

(ii) The value of SREL to DOE

Pure and simple: SREL does not *cost* DOE money, it *saves* DOE (and the American taxpayer) money. As a taxpayer, I cannot understand how DOE can portray eliminating funding to the Laboratory as an economy.

Dr. Whicker described last week how less than $1M of SREL research saved billions of dollars and an important natural community on the SRS by convincing the regulators and the public that Par Pond did not pose a significant risk to public health or the environment, even though it is contaminated with radionuclides.

I would like to present just one additional example of how SREL research can save tax dollars. I can not and am not speaking for the federal EPA; however, I can relay to the Committee the gist of comments made by the EPA Region 4 liaison to the CAB last Tuesday, July 26, 2007, regarding SREL’s closure. In short, EPA Region 4 and EPA–Headquarters are very concerned about the closure of SREL. They have been intending to rely on SREL research to make future closure decisions that could dramatically and detrimentally affect SRS ecosystems, and are concerned that this resource will be lost to them.

As you may know, SRS is a CERCLA National Priorities List site. The regulatory agencies have subdivided the Site into six “Integrated Operable Units” (IOU) based on the watersheds of the five streams that traverse the site, and the Savannah River and its river swamp. Currently DOE and the regulators are remediating the point sources of contamination within each IOU. Decisions on final closure actions for each IOU have been deferred to some time in the future. As occurred with Par Pond (and described by Dr. Whicker), EPA and the South Carolina Department of Health and Environmental Control will determine the final closure actions based on an analysis of the relative risks of potentially destructive remedial actions versus a more benign approach to decontaminating the ecosystem that the closure action is supposed to protect. The EPA would use SREL data to support the more benign, less-disruptive approach. In expressing EPA’s concerns regarding the fate of SREL, EPA’s liaison to the CAB noted that EPA intends to rely on the historic data of SREL, and data to be collected in the future to make the decision on whether or not additional remediation of an IOU (beyond eliminating source terms) is necessary. Without SREL’s data, EPA will lack sufficient information to determine relative risks and will be forced to err on a less data-informed, more “conservative” side. Simply put, the loss of SREL may very well result in additional and unnecessary remediation of these watersheds at great cost to the taxpayer, and at a great loss of valuable natural habitats.

The CAB is always concerned about minimizing costs, but is most concerned about minimizing risk to public health and the environment posed by the legacy waste at SRS. Without SREL’s research and analysis, just like EPA, the CAB will have no ready yardstick to judge the necessity of extensive remediation, and will be forced to recommend a conservative, costly and destructive approach. The CAB recognizes that this is not good for taxpayers or the affected ecosystem.

(iii) The value of SREL to the country

Of course SREL’s research is applicable to situations throughout the country, and indeed the world. Drs. Whicker and Schnoor touched on this in their testimonies. I’d like to present a different perspective of the value of SREL to the country—one that is not tied into scientific research, per se, and less quantifiable than papers published or Ph.D.s granted.

First, in its 56-year history SREL has trained thousands of graduate students. Many have gone on to distinguished careers in academia, and many more work in

State and national regulatory agencies, run research programs for industry, teach science in middle and high schools, provide legal and environmental consultation to clients trying to do the right thing by the natural environment, draft State environmental protection legislation, write books, and are generally advocates for the environment and "good science" in their various communities. This contribution to our country should not be dismissed as inconsequential.

Second, SREL's outreach programs have turned tens of thousands of young people (and their parents and teachers) on to the fun and excitement of science and the environment. I personally know people who chose their scientific careers based on experiences as K–12 students attending SREL outreach programs. No local program replicates the exciting way SREL scientists introduce young people to science, careers in research, and the environment. Teachers and parents throughout the Central Savannah River Area have expressed their dismay at the loss of such an outstanding teaching resource. At a time when we, as a nation, recognize the vital importance of educating our youth in science and math in order to stay competitive in a global economy, the loss of SREL is an incremental step backwards.

Third, SREL is recognized internationally for the science it does, and for the support it provides to scholars and students from other countries. As such, one can consider SREL scientists as de facto good-will ambassadors for the United States. At a time when we need to repair our image abroad, SREL advances international scientific support and cooperation.

Finally, consider that perhaps the real legacy of SRS is not the vitrification of high-level waste, or the production of plutonium and tritium, or the clean-up of contaminated waste sites, but it is the body of ecological knowledge that SREL has discovered and documented for more than half a century. Ultimately that knowledge may turn out to be of greater value to our nation.

III. Conclusion

I'd like to put the take-away from my testimony into the parlance of those Master Card commercials I enjoy so much:

Cost of SREL to DOE: $4.5 million

Value of SREL to local communities, DOE, and the Nation: priceless.

There is no logical explanation for DOE's decision to eliminate funding for SREL. I am sure the Committee has read the editorials, articles and letters in our local papers regarding SREL's demise. No informed member of the public supports SREL's closure. The SRS CAB certainly does not support its closure.

I urge Congress to do the right, cost-effective thing. Restore funding for FY08, *and* find a way to ensure that SREL's future does not rest on the whims of DOE leadership.

Thank you again for inviting me to address the Committee. I very much appreciate the Committee's efforts on behalf of SREL and the American public whose interests are best served by ensuring SREL's continued existence and service to the Nation.

BIOGRAPHY FOR KAREN K. PATTERSON

EMPLOYMENT SUMMARY:

1998–Present—TetraTech NUS

1996–1998—Dunaway & Fletcher

1990–1996—Halliburton NUS, Brown & Root Environmental, NUS

1985–1990—Normandeau Associates

1973–1985—Savannah River Ecology Laboratory

EDUCATION:

M.A.; Biology; Wake Forest University; 1977

B.A.; Biology; Randolph-Macon Woman's College; 1973

MLIS; Library and Information Science; University of South Carolina; 1999

ADDITIONAL EDUCATION:

Leadership South Carolina, University of South Carolina, 2002

AFFILIATIONS:

Savannah River Site Citizens Advisory Board, 1996–2001 and 2004–present; Chair, 2000–2002 and 2006–2008; Executive Committee, 1998–2002, 2004–present; Education Committee Chair, 1998–2000; Spent Nuclear Fuel Public Education Forum, Chair, 1997

American Nuclear Society

EXPERIENCE:

Ms. Patterson has 34 years of professional experience as project manager and subject matter expert on multi-disciplinary environmental projects at the Savannah River Site, and in support of nuclear utilities throughout the country as they prepare license renewal applications, power up-rate applications, licenses for independent spent fuel storage installations, or begin the process to construct and operate new units. She is an environmental scientist with expertise in the *National Environmental Policy Act* (NEPA), *Clean Water Act, Endangered Species Act, Coastal Zone Management Act, Resource Conservation and Recovery Act* (RCRA), and the *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA).

Ms. Patterson has served for more than nine years on the Savannah River Site Citizens Advisory Board, which is chartered by DOE under the *Federal Advisory Committee Act* to provide advice and recommendations to DOE's Office of Environmental Management, SCDHEC, and EPA on clean-up of the SRS. She is a member of the Nuclear Materials and Waste Management Committees of the Board. She was Chairperson of the Board from 1998 to 2000, and is currently serving a second term as Chair. She served as the Education Chairperson and chaired a public education forum on Spent Nuclear Fuel. At the invitation of DOE–HQ, she participated in a round-table discussion of site-specific advisory boards in Brookhaven, NY. She has made presentations at DOE National Site Specific Advisory Board (SSAB) meetings about SRS low-level waste, high-level waste, waste transportation, and SRS activities, and has participated in DOE complex-wide forums on low-level waste, and nuclear waste transportation issues. She was asked by DOE to provide citizen input to a National Academy of Sciences panel on the value of public participation. She regularly participates with other DOE SSAB Chairs and DOE–HQ personnel in national meetings.

Ms. Patterson has extensive public participation experience. She has written and edited technical documents, peer-reviewed articles, symposia publications, articles for the popular press, and has presented papers at various technical societies' national meetings, including the Waste Management Symposium and the American Nuclear Society. She has prepared for, hosted, and participated in public meetings required by environmental laws and agency regulations. She supports utility interactions with regulatory agencies, and has provided support to intervention and regulatory review hearings.

DISCUSSION

Chairman MILLER. Thank you, Ms. Patterson. We will now have the first round of questioning and I recognize myself for five minutes.

CONVERSATION ABOUT REDUCED DOE FUNDING

Dr. Bertsch, Mr. Anderson will testify later. I understand that I did not characterize exactly correctly in questioning Mr. Sell about what Mr. Anderson told our staff. He is adamant that he did, that you knew. He doesn't remember the conversation, he doesn't remember what he said and what you said. He doesn't remember where you all were, whether it was by telephone or in person, but he was sure that he had conveyed to you and that you knew the deal, that SREL would have to get by with dramatically less funding from DOE and SREL would have to be self-sufficient by fiscal year 2007. Did Mr. Anderson ever tell you that?

Dr. BERTSCH. I certainly knew that we were going to be operating on some reduced funding level. The exact amount wasn't determined until much later relative to our conversations. In terms of being self-sufficient, I really don't understand what that means. We are actually physically located on the Savannah River Site and our mission has been focused on Savannah River Site research.

Chairman MILLER. Did he ever tell you whether or not he explained what that meant, that you would have to be self-sufficient by 2007?

Dr. BERTSCH. I don't ever recall the self-sufficiency terminology actually ever coming up.

Chairman MILLER. Doesn't that seem like something you would remember?

Dr. BERTSCH. It certainly would. And I should also say that the only data that exists is my business plan that was put together, which laid out very specifically where the funding elements would come from.

PLAYING MR. ALLISON FOR A CHUMP

Chairman MILLER. Now, in a meeting with our staff, Mr. Anderson suggested that you had played Mr. Allison for a chump, that you knew what the deal was and you realized that he didn't know what the deal was and negotiated this four-year $20 million agreement. This is a $1.2 billion a year site. I would assume that whoever the Department of Energy put in as far as that site would be a pretty savvy guy. Did you play Mr. Allison for a chump?

Dr. BERTSCH. Mr. Chairman, certainly not. Again, if you look at the business plan that I was asked to put together, the funding level that was in that business plan was between $2 million and $3.5 million for funding at the Savannah River Site for projects to be conducted at the Savannah River Site. Many elements of my business plan showed up in the memo, the June 2005 memo, verbatim, to Mr. Allison and Mr. Allison and I then began, in August of 2005 negotiating in good faith in terms of generating the terms and scope of the new cooperative agreement.

JULY 2005 NEWSLETTER QUOTE

Chairman MILLER. Mr. Sell made a great deal out of a quote in a newsletter, a July 2005 newsletter. Could you explain what you meant by that quote, what the context was? Did you say that?

Dr. BERTSCH. Sure, Mr. Chairman. Yes, that is a quote. The context is that we had just been at a budget reduction of about 50 percent. I had to reduce the staff at Savannah River Ecology Laboratory by over a third. We lost almost half of our faculty. And I was asked to put together a transition reconfiguration plan and as you can imagine, it was a very painful and difficult and challenging process. And the context was that yes, we weren't zeroed out, we were still in business and yes, I had to go forward, at least in fiscal year 2006, with half the budget I had in fiscal year 2005.

At the same time, I was encouraged by the fact that the memo from Mr. Anderson to Mr. Allison did, in fact, include the elements of my business plan, but I had not yet, at that time when I made that quote, entered into discussions with Mr. Allison. It was unclear to me what the future was going to be at that time.

COMPETING IN THE WORK DONE FOR SREL

Chairman MILLER. Dr. Bertsch, were you ever asked to submit anything to compete for any of the work that SREL had been—do you call it SREL?

Dr. BERTSCH. We actually call it S-R-E-L and I suspect that is because it has been around since 1951. If it was more recent, I am sure we would call it SREL, like everybody else does.

Chairman MILLER. Okay. I assure you the military would call it SREL. Were you ever asked to compete for any of the work that had previously been done by SREL? Were you ever given any criteria for competition? Were you ever asked to submit any documents? Were you ever asked to compete in any way for the work that you had done in the past?

Dr. BERTSCH. At the Savannah River Site, yes, sir. No, Mr. Chairman, but the notion that this was non-competitive is really not one that we control. Our cooperative agreement was renewed every five years, like many cooperative agreements are, like other centers, for example, in other agencies. And the Department of Energy could have chosen to compete that cooperative agreement at any time. The fact that they didn't, we could explore reasons why. I think they chose to self-source it, but no, we were never asked to compete.

Chairman MILLER. Okay. Would you have liked your chances?

Dr. BERTSCH. Well, in terms of the specific funding elements that were in question in terms of the budget cuts this year, absolutely. We would have liked to have had a peer review.

Chairman MILLER. No, would you have liked if you had been asked to compete to do environmental characterization at the site, ecological risk and effects, remediation and restoration, would you have liked your chances pretty well?

Dr. BERTSCH. Oh, yes. Very much so.

Chairman MILLER. Okay. But Mr. Sell named, and I slightly exceed my time, Mr. Sell mentioned several other entities that were competent to do the same work. Are you aware that they have been asked to compete for that work or submit proposals to do the work that SREL has done in the past. Are you aware that anybody else is doing the work that SREL has done in the past?

Dr. BERTSCH. No.

Chairman MILLER. So as far as you, it is going undone?

Dr. BERTSCH. That is correct.

Chairman MILLER. You did not lose a competition for that work, it is simply not being done?

Dr. BERTSCH. That is correct.

Chairman MILLER. I have exceeded by time. The Chair now recognizes Mr. Sensenbrenner.

UNDERSTANDING SREL FUNDING FROM THE DOE IN 2007

Mr. SENSENBRENNER. I have been sitting through this hearing and the previous hearing and it appears to me that some folks have been playing a game of chicken on funding and I want to find out why that is the case. Dr. Bertsch, several times in your testimony you state that it was your understanding that DOE funding levels for SREL for fiscal year 2006 were not going to continue into fiscal year 2007 and beyond and I quote from Page 4, “We also discussed the funding level needed to keep SREL viable. I was asked what my understanding was of the Office of Science’s funding for fiscal 2007 would be, that is was the $1 million recurring? I answered that I was sure it was not and while we could continue to pursue grants from the Office of Science, we could not expect future funding for the SREL program.”

Later on you explain that during a March 2006 budget meeting there was confusion over DOE funding levels for fiscal 2007 and when someone stated their belief that DOE would be providing SREL $3 million for fiscal 2007, you felt that this was inconsistent with previous discussions. Based on those previous discussions, what was your understanding of SREL funding from the DOE for fiscal 2007?

Dr. BERTSCH. Congressman, the context with which the quote, the first quote was taken was my initial meeting with Mr. Allison to execute the guidance that we had gotten from Mr. Charlie Anderson. The discussion revolved around what would it take to keep us a viable lab and again, in the context that we had just gone through, a 50 percent reduction in our budget and lost a third of our research and support staff. The question arose in that discussion if it was my understanding that Science would provide a million dollars recurring or if Savannah River Site would have to come up with $4 million to keep us viable.

Mr. SENSENBRENNER. Okay, so from what you just stated, you knew that there was not a commitment that the Office of Science would continue the million dollars past fiscal 2007, am I correct in that assumption?

Dr. BERTSCH. Well, certainly from the guidance letter, it was never stated explicitly in the guidance letter that Mr. Allison received from Mr. Anderson and so when I was asked that question, I felt certain that we were now moving under Environmental Management 100 percent in terms of our funding, so we were being moved back under the Savannah River Site umbrella.

UNIVERSITY OF GEORGIA SREL FUNDING

Mr. SENSENBRENNER. Now, also on Page 4 of your testimony, you say, “I also mentioned that UGA would be reducing its additional investment of State funding beginning July 1, 2007.” If this lab was so valuable to the University of Georgia and to the area, why was the State cutting its funding, as well?

Dr. BERTSCH. Congressman, the University invested additional funds in SREL to get us through the transition period and that commitment was made for one Georgia fiscal year and so it was clear that that funding would go away beginning this past July, that additional investment. So they, in essence, had doubled their investment in terms of the money that the State was putting in to help us through the transition period.

Mr. SENSENBRENNER. You recognize that there was a transition. You went to the University of Georgia and the Georgia legislature and asked for some money to tide you over, recognizing that that was nonrecurring without having any future commitment of funds from the Officer of Science. Am I correct in that?

Dr. BERTSCH. That is correct.

Mr. SENSENBRENNER. So we are playing a game of chicken here, you know, I get back to the business of saying that we shouldn't have noncompetitive guaranteed funding. One of the first things that I did in the Science Committee, when I got on it in the early 1980s, was work to make fungible a lot of the DOE grants so that we wouldn't have specific line items for various types of energy research and the first steps on that were taken bipartisanly and cooperatively in the early 1980s and then during my chairmanship of the Science Committee, we were able to complete the loop on a complete bipartisan basis with the support of the Clinton Administration. It seems to me that somebody down there hasn't gotten the message and maybe we ought to find out who. And my time is up.

Chairman MILLER. The Chair recognizes Mr. Hall for five minutes.

BROADENING SREL'S FUNDING BASE

Mr. HALL. Dr. Bertsch, in a document that you claimed to have given to DOE's Office of Congressional and Governmental Affairs, you state that S-R-E-L or SREL or whatever you want to call them, was going to have to broaden its funding base, right, and did you do that?

Dr. BERTSCH. Yes, we did.

Mr. HALL. Were you successful in broadening the base?

Dr. BERTSCH. Yes, we were, Congressman.

Mr. HALL. And how successful were you?

Dr. BERTSCH. When I became Director, we were bringing in about a half a million dollars a year in external funds, that is external to the Department of Energy. The year that we were zeroed out, we were right around $1.25 million. This past year, the Georgia fiscal year that just ended, we were at $2.5 million. And I should say that the increase in that outside funding occurred on top of a reconfiguration of the laboratory and loss of almost half of the faculty. The target that I had put in that business plan/funding portfolio that came out of our May 11 meeting, had a target between $2 million and $3 million.

Mr. HALL. How did you do on competitive grants?

Dr. BERTSCH. The $2.5 million is competitive grants. We currently have about $5.25 million of active grants. The $2.5 million is actually what came into SREL in the past——

Mr. HALL. What year did that $2.5 million come in?

Dr. BERTSCH. In Georgia fiscal year 2007. Just ended June 30th.

SRS FUNDING FOR SREL AND JILL SIGAL

Mr. HALL. And also, according to your written testimony on May the 11th, you talked about meeting—your stated a belief that the Savannah River Site would fund $2 million to $3.5 million per year and SREL—a contention that Jill Sigal actually challenged, didn't she? She didn't agree with you on that.

Dr. BERTSCH. That is my recollection. She said that is perhaps not what she had heard.

Mr. HALL. And if she didn't believe that SRS valued SREL's work, why would she send a memo to the Secretary recommending additional funds for SREL?

Dr. BERTSCH. Well, the remainder of that testimony suggests that I respectfully disagreed with Ms. Sigal at the time. I talked about how the Savannah River Site valued SREL's work. I have long worked at the Savannah River Site with the contractor, as well as the DOE personnel.

Mr. HALL. Have you ever criticized Ms. Sigal's activity in conjunction with this project?

Dr. BERTSCH. So what I am saying is that——

Mr. HALL. I am asking you——

Dr. BERTSCH. I am sorry.

Mr. HALL.—if you ever criticized her work, her participation in the redirecting funds to SREL?

Dr. BERTSCH. I certainly questioned why that was happening.

Mr. HALL. Were you critical of her?

Dr. BERTSCH. I probably was critical of the activities, yes.

Mr. HALL. Okay. And when did you know of her workout for SREL? The workout that she negotiated for you. When did you know of that?

Dr. BERTSCH. When did I know of that?

Mr. HALL. Yes.

Dr. BERTSCH. That would have been June of 2005.

Mr. HALL. And when was the funding actually cut by the Department of Energy? Do you know that date?

Dr. BERTSCH. The funding cut this year?

Mr. HALL. The funding cut, that occasion in 2005.

Dr. BERTSCH. Oh, well, the 2005 would have been at the end of the 2005 fiscal year, so the beginning of the 2006 fiscal year was the cut in our funding.

Mr. HALL. And what was the date of your new funding?

Dr. BERTSCH. The funding resulting from——

Mr. HALL. Yes. The $4 million plus to the $1 million plus for the next year.

Dr. BERTSCH. That would have been October 1 of 2006.

Mr. HALL. So you were familiar with all of those dates?

Dr. BERTSCH. Yes.

Mr. HALL. When did you first meet Jill Sigal?

Dr. BERTSCH. At the May 11th meeting.

Mr. HALL. Of what year?

Dr. BERTSCH. 2005.

Mr. HALL. Had your funding been cut at that time?

Dr. BERTSCH. The funding had been zeroed out in the president's request to Congress.

Mr. HALL. I beg your pardon?

Dr. BERTSCH. The SREL funding had been zeroed out in the president's request to Congress.

Mr. HALL. And what did you do then? Did you request the Department of Energy to reconsider?

Dr. BERTSCH. Yes, I did.

Mr. HALL. And were you assigned to Jill Sigal?

Dr. BERTSCH. Well——

Mr. HALL. Did you work with Jill Sigal in her effort to reclaim funding for you?

Dr. BERTSCH. I simply had that one meeting and then produced the business plan/funding portfolio document.

Mr. HALL. About what date was that?

Dr. BERTSCH. The meeting was May 11th, 2005. I was asked to provide a two-page document by the close of business the following day.

Mr. HALL. Were Ms. Sigal and Mr. Anderson helpful in reopening the negotiations and were they successful in getting an offer that kept your operation open?

Dr. BERTSCH. Absolutely.

Mr. HALL. My time is up. I will get back to that. Thank you.

Chairman MILLER. Thank you. We will now have a second round of questioning and the Chair now recognizes himself for five minutes.

SAVANNAH RIVER ECOLOGY LABORATORY LONG-TERM FUNDING

Dr. Bertsch, you mentioned the business plan that you prepared in May of 2005 at the request of Jill Sigal. I think that is the document that we have entitled Savannah River Ecology Laboratory Long-Term Funding and it sets forth task funding, proposed task funding of $2 million to $3.5 million for environmental characterization, ecological risk and effects, remediation and restoration. Did you discuss those tasks, those fairly broad tasks, three categories of tasks, with Mr. Allison?

Dr. BERTSCH. Yes. Yes, I did.

Chairman MILLER. Did Mr. Allison or anyone else at the Department of Energy tell you that those tasks were not necessary?

Dr. BERTSCH. No, they didn't.

Chairman MILLER. Did they accept those tasks, did they embrace those tasks as what SREL should be doing?

Dr. BERTSCH. Yes, they did.

Chairman MILLER. And are any of these tasks excluded from the December 2006 cooperative agreement? Or does the December 2006 cooperative agreement pretty much reflect those tasks, as well, those categories of tasks?

Dr. BERTSCH. Yes, the agreement still contains those tasks.

Chairman MILLER. Okay. Did you, at some point, with Mr. Allison or anyone else, try to make a more specific list of the tasks beyond these categories, the broader categories?

Dr. BERTSCH. Yes, Mr. Chairman, we generate research plans on an annual basis.

Chairman MILLER. Okay.

Dr. BERTSCH. So this is a fairly detailed document in terms of what tasks would be performed for the $4 million of funding.

Chairman MILLER. Okay. And did you do that in consultation with folks from the site?

Dr. BERTSCH. Yes, we did.

Chairman MILLER. Who did you work with there?

Dr. BERTSCH. We worked with the—well, the original—the first version of the cooperative agreement that included our research plans, worked through the program people at the Savannah River

Site that we reported to and so that was Karen Hooker and her staff would be Dennis Ryan and Ben Gould.

Chairman MILLER. And at some point were you told that those tasks, that some of those tasks were not necessary? Were not mission critical for 2007?

Dr. BERTSCH. Well, the mission critical standard was first introduced February 20th of 2007 and then yes, we were told that they were no longer—they did not meet that standard.

Chairman MILLER. Who told you that was the standard?

Dr. BERTSCH. That was Ms. Collazo.

Chairman MILLER. And had you heard of that standard before?

Dr. BERTSCH. No.

Chairman MILLER. Had you been consulted about developing that standard?

Dr. BERTSCH. No.

Chairman MILLER. Had Mr. Allison, to your knowledge, been consulted about developing that standard?

Dr. BERTSCH. No.

Chairman MILLER. How much of what you did at SREL was produced, a discreet result, a deliverable, to use the jargon, for a given fiscal year? How much of what you did was long-term?

Dr. BERTSCH. Well, of course, the research and development organization is always looking longer term and so having a mission critical standard in the fiscal year that you are in makes it very difficult for any R and D organization.

Chairman MILLER. Did anyone explain to you why—how many of the tasks, how many tasks did you develop and how many were found to be, were you told, were found to be mission critical for 2007?

Dr. BERTSCH. In my Attachment F, you will see an evolution of the tasks from our research plans, which is a 22-page document, to these task tables which evolved from a larger number to a smaller number once the standard went from mission related to mission critical. So we had 27 in the final task table that was judged to be by the standard of mission critical. We had 27 tasks. Six of those tasks were deemed to be mission critical. All six of those had been funded in August of 2006 by the contractor and much of the work had already been conducted.

Chairman MILLER. Okay. And again, those 27 tasks, what role did the DOE site staff play in developing those tasks?

Dr. BERTSCH. That involved a much larger cross-section of the DOE staff working with the system managers of the three business units, Environmental Management, Federal Facilities Officers, as well as interaction with the contractor.

Chairman MILLER. Okay. I think in our staff interviews, department personnel have described it as mission critical versus nice-to-haves. Did anyone at the DOE at the Savannah River Site tell you that those 27 tasks were nice to have but not critical?

Dr. BERTSCH. We were told that April 19th.

Chairman MILLER. But not before?

Dr. BERTSCH. Not before.

Chairman MILLER. Were you asked to defend, were you asked to explain why some of those tasks, any of those tasks were more than just nice to have?

Dr. BERTSCH. Through a formal process, no. We did have a meeting where it was discussed.

Chairman MILLER. And did anyone explain to you what the term mission critical was or what its origin was?

Dr. BERTSCH. No, Mr. Chairman, I was never able to get a definition of mission critical.

Chairman MILLER. My time has expired. Mr. Hall is recognized for an additional five minutes.

MORE ON BROADENING SREL'S FUNDING BASE

Mr. HALL. Let me just go back with you, Dr. Bertsch. In a document you claimed of giving DOE's Office of Congressional and Governmental Affairs, you stated SREL would have to broaden its funding base and you say that it did broaden its funding base, but you are telling me that you were successful in the broadening of the funding base?

Dr. BERTSCH. Yes, we have been successful in diversifying our funding base.

Mr. HALL. Are you closed now?

Dr. BERTSCH. We are not closed. We are on a one-year trial to try to wrap up the projects that absolutely require the facilities at SREL to conclude these outside contracts and grants.

Mr. HALL. But you felt that the Congressional—maybe others felt that they could become self-funded by fiscal year 2007, but you haven't, have you?

Dr. BERTSCH. This self-sufficient standard was never explained to me.

Mr. HALL. Well, just answer my question. You haven't become self-sufficient and that means you weren't successful in your efforts to broaden the base because you didn't broaden the base enough to stay open, keep operating. Is that right?

Dr. BERTSCH. Congressman, we have a cooperative agreement with the Department of Energy, who is our main customer, to conduct work on the Savannah River Site and without funding from the Department of Energy Savannah River Site, we would not—there would be no reason for us to be there. We occupy DOE buildings. Out of our budget, we are responsible for maintaining those buildings, keeping up all of the infrastructure, including things like IT functions, so forth.

OFFICE OF SCIENCE GRANTS

Mr. HALL. As of June the 1st, 2007, had SREL applied for any funding from the Office of Science for fiscal year 2007?

Dr. BERTSCH. I am sure that we probably have. Well, I am sure we submitted grants to the Office of Science.

Mr. HALL. Isn't it true that you submitted one proposal and that was peer reviewed and not accepted? Isn't that what the records show?

Dr. BERTSCH. That may be true. We have three active Office of Science grants that I am aware of in the laboratory. We do have scientists that submit proposals to the Office of Science for specific RFPs, in response to specific RFPs.

MS. SIGAL AND MR. ANDERSON

Mr. HALL. You were Director there and you knew when the workout was accomplished for SREL. You were there when you knew when the funding was cut. You have given me your information that you knew when that happened and the date of the new funding because you were director of the lab. Why is it that you wouldn't have known of the work that Jill Sigal and Charlie Anderson put in that saved your lab? How could you not know that?

Dr. BERTSCH. Congressman, I did.

Mr. HALL. Have you not contended that you didn't?

Dr. BERTSCH. That I was unaware——

Mr. HALL. Did you not tell people that you were not aware of when the lab closed and how it closed?

Dr. BERTSCH. I was never—could you repeat the question, please?

Mr. HALL. Well, my question is if you knew when the workout was made and you knew when the cuts were set forth and knew when the new funding came about, why is it that you criticized Jill Sigal and Charles Anderson and contend that they didn't do anything to help you?

Dr. BERTSCH. In 2005 they certainly did. The concern was we were following specific guidance that we, I mean Mr. Allison and myself, in terms of renegotiating the new cooperative agreement. That negotiation went on for a year and where we established the scope in the projects that were supposed to be funded in the new cooperative agreement.

Mr. HALL. Do you have any personal knowledge that Jill Sigal had intervened for you and Charlie Anderson intervened for you in saving this lab?

Dr. BERTSCH. In 2005?

Mr. HALL. Yes.

Dr. BERTSCH. It would seem that they did.

Mr. HALL. Looking back on it, do you think they did? You could have been director and operating director of the lab itself and you couldn't have known, isn't it impossible that you couldn't have known that?

Dr. BERTSCH. Congressman, I did know that in 2005.

Mr. HALL. Then why were you critical of these people that were helping you?

Dr. BERTSCH. I was not critical at that time.

Mr. HALL. Well, what time were you critical?

Dr. BERTSCH. I was——

Mr. HALL. Are you critical today?

Dr. BERTSCH. Congressman, the—what I was concerned about was the fact that we had spent a year working in good faith, following specific direction that we got and——

Mr. HALL. Well, answer my question. Are you critical of her and of Charlie Anderson today, of their actions?

Dr. BERTSCH. I was critical of the actions——

Mr. HALL. You were. Are you today? You aren't, are you? You are not critical today knowing the full facts and looking back and seeing the record and seeing the e-mails and seeing all the reports. You are not today—you can't sit there and say you are critical of these two people that breathed life back into your operation when you are the Director of it. You see every occupation, every job. You see people that work for you. You have every report. You couldn't have been blind enough not to have known that you had some help and that these two people helped you and breathed life back into your operation and you could still be operating fine if you had been successful as you say you were in broadening your scope. You weren't successful in that. You are about to close down out there and do you still criticize Jill Sigal and Charlie Anderson for the help they gave you? Just yes or no.

Dr. BERTSCH. Not for the help.

Mr. HALL. I am out of time and I hope you are not out of patience. Thank you.

Dr. BERTSCH. Thank you.

Chairman MILLER. Mr. Sensenbrenner.

Mr. SENSENBRENNER. I have no questions.

MORE ON UNIVERSITY OF GEORGIA FUNDING

Chairman MILLER. Mr. Sensenbrenner has no questions. Dr. Bertsch, I have a few questions just based upon Mr. Hall's questions, not all of which I understood, but I will ask some questions about the ones I did understand. Well, maybe it was Mr. Sensenbrenner's question about Georgia, the State of Georgia terminating funding, as well, funding terminated June 30. It sounded, from his questions, like both the Federal Government and State government had lost confidence in you at the same time. When did the Georgia funding that Mr. Sensenbrenner referred to begin?

Dr. BERTSCH. That actually began in July of 2006.

Chairman MILLER. Okay. And what was the purpose of that funding?

Dr. BERTSCH. The purpose of that funding was to help us through the transition.

Chairman MILLER. I am sorry. Say that again?

Dr. BERTSCH. It was to help us through the transition period as we tried to implement our reconfiguration plan.

Chairman MILLER. Okay. But was it intended to be long-term funding or was it intended to be transitional funding?

Dr. BERTSCH. It was transitional funding.

SRS ENVIRONMENTAL RESEARCH

Chairman MILLER. There have been a lot of questions about why you didn't expand your work. My understanding was that the lab's work was to do environmental research at the Savannah River Site. Is that correct?

Dr. BERTSCH. Yes, that is correct.

Chairman MILLER. Did anyone suggest you ought to be selling ice cream in Aiken for additional funds?

Dr. BERTSCH. Well, it was clear that we were supposed to diversify our funding base.

Chairman MILLER. Okay. Did anyone tell you, besides doing environmental research at the Savannah River Site what it was that you were supposed to do?

Dr. BERTSCH. No, we just were interested in leveraging the daily portion of our funding and get to expand our funding in terms of competitive grants from other agencies.

Chairman MILLER. It seems like there would be a fairly limited clientele for research, environmental research conducted at the Savannah River Site. Not many households would be in the market for that. Not many businesses would be in the market for that. Were there other customers for that work that anyone directed you to? Are there any that occur to you now?

Dr. BERTSCH. Well, our work is well-recognized by a variety of other agencies and a lot of the competitive funding that we get from other agencies is not necessarily done on the Savannah River Site. Some of it actually is. It certainly builds on our expertise that we have developed over the years working in concert with DOE.

SREL PEER REVIEW

Chairman MILLER. Materials that were—or the suggestion that there was a peer review and SREL did not survive the peer review, were the 27 tasks that you developed in consultation with personnel at the site, were those peer reviewed, to your knowledge?

Dr. BERTSCH. No, they were not.

Chairman MILLER. You are an academic, unlike me. What is involved in peer review?

Dr. BERTSCH. In peer review, you are responding to a specific request for a proposal. You submit a proposal in response to that request. Typically, this is a very specific date in time that it needs to be in by and then it goes through a peer review process which typically means it is sent out to colleagues and fellow investigators that have expertise in the area that you are submitting your grants reviewed and then typically a panel convenes to make final decisions on the grants that are submitted.

Chairman MILLER. And I know some Members of the Minority have questioned my wondering about paper or the lack of paper, but does peer review, as you described it, not generate documents?

Dr. BERTSCH. Yes, it does.

Chairman MILLER. Not just a couple of guys in the office talking?

Dr. BERTSCH. No, it is not.

Chairman MILLER. So if we don't have any documents reflecting peer review considerations, it is reasonable to assume that there was no peer review, is that right?

Dr. BERTSCH. That would be my assumption.

COMMUNITY RELATIONSHIP WITH SRS WITHOUT SREL

Chairman MILLER. All right. Ms. Patterson, you have sat patiently. I know that you need to catch a plane. And I can imagine that folks in the community immediately surrounding SREL or not SREL, but the Savannah River Site, where there are high level nuclear materials, would want to be reassured that there is environmental monitoring going on at the site. The tadpoles with two heads that is nothing that they need to worry about in particular. What do you think is going to happen to the community's relationship with the Savannah River Site with SREL no longer in operation?

Ms. PATTERSON. Well, this is the second time in two years where the community has observed decisions that DOE has made that have resulted in what I would characterize as a distancing of the public from the decision-making process or general knowledge of what is going on at Savannah River Site. The first one had to do with the administration of the CAB and my concern—these two instances have highlighted three things that concern me, concern the community. One is that Savannah River and headquarters have inconsistent expectations, apparently, or they communicate different things to SREL and to the CAB.

So I am concerned that headquarters and Savannah River don't speak with one voice. Second is that I don't—this is my personal opinion—I don't think headquarters actually considers the input that Savannah River provides. I think that the site manager knows better than headquarters what works on his site. And I have not seen that headquarters pays attention to that kind of information. And third, and this is again just my opinion, the trend of DOE turning back to the murky waters of secrecy, which this appears to be, upsets me. So short answer, the public is not happy. We are concerned that we are being shut out of the process.

Chairman MILLER. Mr. Hall is recognized for five minutes.

MORE ON MS. SIGAL AND MR. ANDERSON

Mr. HALL. Just one last question and thank you, Ms. Patterson. I wish I could think of something pleasant to ask you, but you have been very courteous and thank you for your time.

Ms. PATTERSON. Thank you.

Mr. HALL. And Doctor, I want to ask you this question. Inasmuch as we have, I think, established that you now know that Jill Sigal and Charlie Anderson did intervene and did keep the doors open, keep it going, let me ask you this last question. What would have happened if they hadn't?

Dr. BERTSCH. In 2005 we would have closed.

Mr. HALL. Been closed down about two years ago, wouldn't you?

Dr. BERTSCH. That is correct.

Mr. HALL. That is all I have and I thank you, sir.

CREDIBILITY OF FOR-PROFIT CONTRACTORS VERSUS SREL

Chairman MILLER. Mr. Sensenbrenner for five minutes. Just one more for Ms. Patterson. Mr. Inglis, who with whom I have a very pleasant personal relationship, we——

Mr. PATTERSON. And who is from South Carolina.

Chairman MILLER. And he is from South Carolina. Spoke admiringly of the efficiency of a government agency that could conduct cost benefit analyses without spending a whole lot of time writing it down. I am skeptical that there was really a cost benefit analysis of SREL closing and having the same environmental monitoring work done by private contractors. But if at some point in the future the Savannah River Site, in order to comply with environmental law, the requirements of environmental laws, has to contract with private contractors to gather data, to monitor the environment. Will private, presumably for-profit contractors have the same credibility in the community that SREL has?

Ms. PATTERSON. No, sir, they will not.

Chairman MILLER. Why would they not?

Ms. PATTERSON. I am a private contractor and I know that the role of a contractor is to help its client put a good spin on whatever the information is and that transfers—the community recognizes that, too, that if I am paid directly by DOE to DOE's monitoring, it would behoove me to not fudge data, make anything up, but put a positive spin on what we find. And so the community would approach it as that is the approach. I can't really trust this because DOE has paid for this data, therefore I am not sure I can trust it.

Chairman MILLER. Okay. So if folks in the community started noticing that tadpoles had two heads and you went to the Savannah River Site and they said SREL is conducting our environmental monitoring and they say there is nothing to be alarmed about versus a private contractor; we have hired a private contractor to do our environmental monitoring and they say we have got nothing to worry about, is there the same level of credibility or assurance in the community?

Ms. PATTERSON. No. As I said in my testimony, the public is sometimes skeptical of DOE's pronouncements that all is well. But when we have SREL information backing it up, we believe that it really is well. We have never found SREL not to be straight shooters with us. If DOE said all is well and the only support they had was a contractor that they had hired to support that information, we would be skeptical that there could be something wrong, not that there would be, but there could be.

Chairman MILLER. All right. Dr. Bertsch, Ms. Patterson, thank you very much for being here.

Dr. BERTSCH. Thank you, Mr. Chairman.

Chairman MILLER. We will take just a two or three minute break before beginning our third panel so we can all stretch and do whatever else.

[Recess]

Chairman MILLER. We are back in session. I would now like to introduce our third panel. Our first witness, Charles Anderson, the Principal Deputy Assistant Secretary for the Office of Environmental Management; our second witness, Mr. Jeffrey Allison is the Manager of the Savannah River Site Office. Both of them have been mentioned several times in the testimony already; Mr. Mark Gilbertson, the Deputy Assistant Secretary for Engineering and Technology, Office of Environmental Management, Department of Energy; and finally Ms. Yvette Collazo is the Assistant Manager for Closure Projects at the Savannah River Site Office.

All of you should know, from having been here, that our spoken testimony is limited to five minutes, after which Members have five minutes to ask questions. But our practice is to take testimony under oath. Do any of you have any objection to being sworn in? It is also your right to be represented by counsel. Do any of you have counsel present? Are any of you represented by counsel at today's hearing? All right. If you would all now raise your right hand.

[Witnesses sworn]

Chairman MILLER. The witnesses have now taken the oath. Mr. Anderson, you may begin.

Panel III:

STATEMENT OF MR. CHARLES E. ANDERSON, PRINCIPAL DEPUTY ASSISTANT SECRETARY, OFFICE OF ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Mr. ANDERSON. Thank you. Good afternoon, Chairman Miller, Ranking Member Sensenbrenner, and Congressman Hall. My name is Charlie Anderson and I am the Principal Deputy Assistant Secretary for the Department of Energy's Office of Environmental Management. In that role I am the program's senior career federal official and manage the day-to-day operations of the organization. I appreciate the opportunity to come here today to discuss with you the timeline and decisions made by the Department that have resulted in my appearance here today.

Deputy Secretary Sell has provided you with an overview of the events. My testimony today will provide details of my specific role in decisions made, discussions with the University of Georgia, Members of Congress and my staff, and direction given relative to the Savannah River Ecology Laboratory.

Although the Savannah River Ecology Laboratory is located on the Savannah River Site, it is managed by the University of Georgia. The Department expected the University to take leadership in setting the course of the laboratory's future. The Office of Science made tough budget and programmatic decisions for fiscal year 2006. As a result, the Savannah River Ecology Laboratory no longer would receive direct funding from the Department of Energy outside of successfully peer reviewed proposals for mission relevant research. At that time, the Department received letters from both the Georgia and South Carolina congressional delegations requesting restoration of the laboratory's direct funding.

In May 2005, the Assistant Secretary for Congressional and Intergovernmental Affairs, Jill Sigal and I helped negotiate an agreement among the Department, the laboratory, the University of Georgia, and Members of both of the South Carolina and Georgia Congressional delegations.

We agreed that the Office of Environmental Management would provide an additional $3 million in fiscal year 2006, with the Department providing a total of approximately $4.3 million in funds for the laboratory in fiscal year 2006. The Office of Environmental Management would then provide $1 million in fiscal year 2007 for infrastructure, along with additional funds for research projects to be provided on a task-by-task basis. Additionally, for its part, the University of Georgia agreed to provide $1 million for infrastructure in support of its laboratory in fiscal year 2007.

The basis of the Department's agreement to provide additional funding in 2007 was the commitment by the Savannah River Ecology Laboratory and the University of Georgia to seek outside funding sources and to become self-sustaining. This is exactly how our National Laboratory at Savannah River is funded. I will note former Savannah River Ecology Laboratory Director Paul Bertsch's understanding of this arrangement when he was quoted in a July 11, 2005 University of Georgia Campus News article which has been quoted before: "We are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources." I would ask the Committee to include this press article in the hearing record, if it has not already been done so, so far.

[The information follows:]

SREL budget is cut, employees face layoffs in October
Columns
UGA Faculty and Staff newspaper
UGA Office of Public Affairs
July 11 , 2005
By Tom Jackson
tjackson@uga.edu

About one-third of the employees working under a U.S. Department of Energy contract at the university's Savannah River Ecology Laboratory have been notified that their positions will end Sept. 30, 2005, due to a reduction in the federal grant that funds much of the facility.

During the budget development process, the federal administration proposed eliminating $7.748 million in federal funding for the facility, operated by UGA since 1951.

Through the cooperative efforts of members of the Georgia and South Carolina congressional delegations, the federal grant will not be eliminated entirely for the fiscal year beginning Oct. 1, but instead will be reduced to $4.3 million (including $300,000 from the National Nuclear Security Administration, funding which SREL also received in fiscal year '05). This is a budget reduction of 47 percent.

Officials hope alternate funding sources—in the form of contracts and grants from the Department of Energy and other agencies—may be secured to replace at least some of the funding. "SREL will need to downsize and develop areas of focus commensurate with federal grant funding priorities," says Vice President for Research Gordhan Patel, to whom SREL reports. "In addition, SREL will need to enhance partnerships with other state, federal and private entities."

SREL's primary purpose is to provide an independent assessment of environmental impacts of the Savannah River Site, a 310-square-mile DOE facility in western South Carolina that once produced nuclear materials.

Although it is a 54-year-old arrangement, SREL funding has always been so-called "soft money"—a grant subject to renewal. The current five-year contract between the DOE and UGA was signed in 2001 and expires June 30, 2006. But the federal funding reduction is effective Oct. 1, 2005, and thus the laboratory will not have funding to operate at its previous capacity beyond that date.

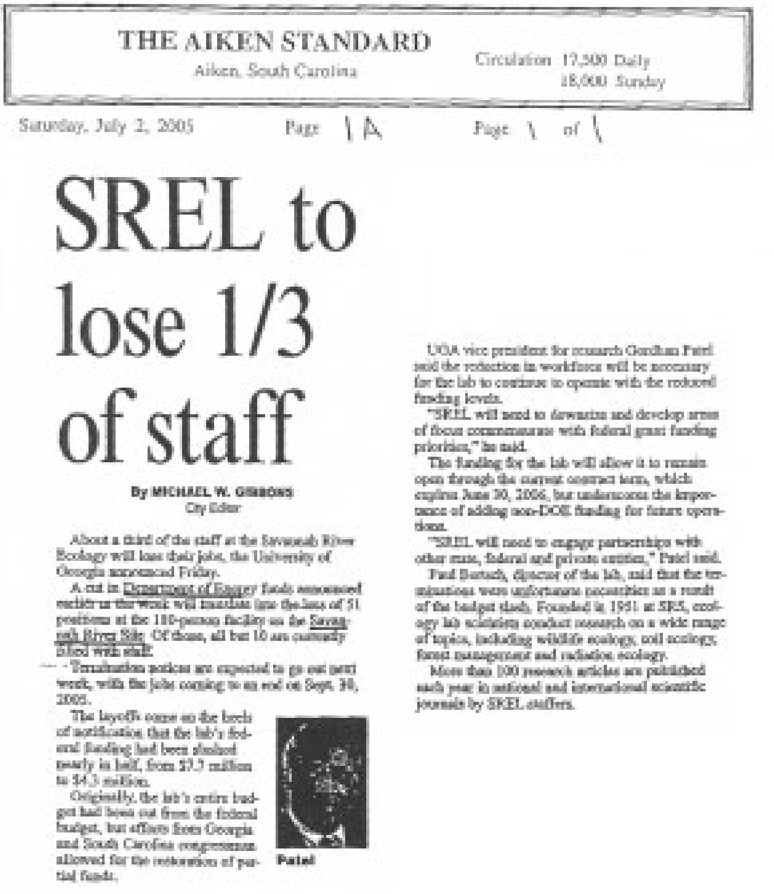
Of 180 employees at SREL, 150 positions are funded by the Department of Energy grant. The reduction eliminates 51 of those occupied. Some of those 41 will accept early retirement, shift to part-time employment, or find other jobs and resign, but those remaining will face involuntary separation.

"Five of the positions are occupied by tenured faculty members of the University of Georgia, and we have made arrangements for them to be transferred to teaching and research positions," says Arnett C. Mace Jr., senior vice president for academic affairs and provost. Mace says funding was set aside in the university's fiscal year '06 budget to pick up those tenured positions in anticipation of the SREL grant reduction.

"Positions funded from contracts and grants, which are considered 'soft funds,' are subject to termination when the contract or grant ends," says Duane Ritter, interim director of human resources. "While this program has been in existence 54 years, the principle is the same."

"From its inception, SREL has been a UGA research unit recognized for its effectiveness in conducting independent research on the impacts of Savannah River Site operations," says Paul M. Bertsch, SREL director. "It has been an independent and credible source of information on environmental issues relating to nuclear materials production and processing, and is known world-wide as a leading ecological and environmental laboratory. We are so sorry to see these fine staff members lose their positions, but if the federal grant must end, we are grateful that our congressional delegations have seen fit to give us a year to develop alternative funding sources."

http://www.uga.edu/columns/050711/news-srel.html



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Saturday, July 2, 2005 Page 1A Page 1 of 1

SREL to lose 1/3 of staff

By MICHAEL W. GIBBONS
City Editor

About a third of the staff at the Savannah River Ecology will lose their jobs, the University of Georgia announced Friday.

A cut in Department of Energy funds announced earlier in the week will translate into the loss of 51 positions at the 180-person facility on the Savannah River Site. Of those, all but 10 are currently filled with staff.

Termination notices are expected to go out next week, with the jobs coming to an end on Sept. 30, 2005.

The layoffs come on the heels of notification that the lab's federal funding had been slashed nearly in half, from $7.3 million to $4.3 million.

Originally, the lab's entire budget had been cut from the federal budget, but efforts from Georgia and South Carolina congressmen allowed for the restoration of partial funds.

Patel

UGA vice president for research Gordhan Patel said the reduction in workforce will be necessary for the lab to continue to operate with the reduced funding levels.

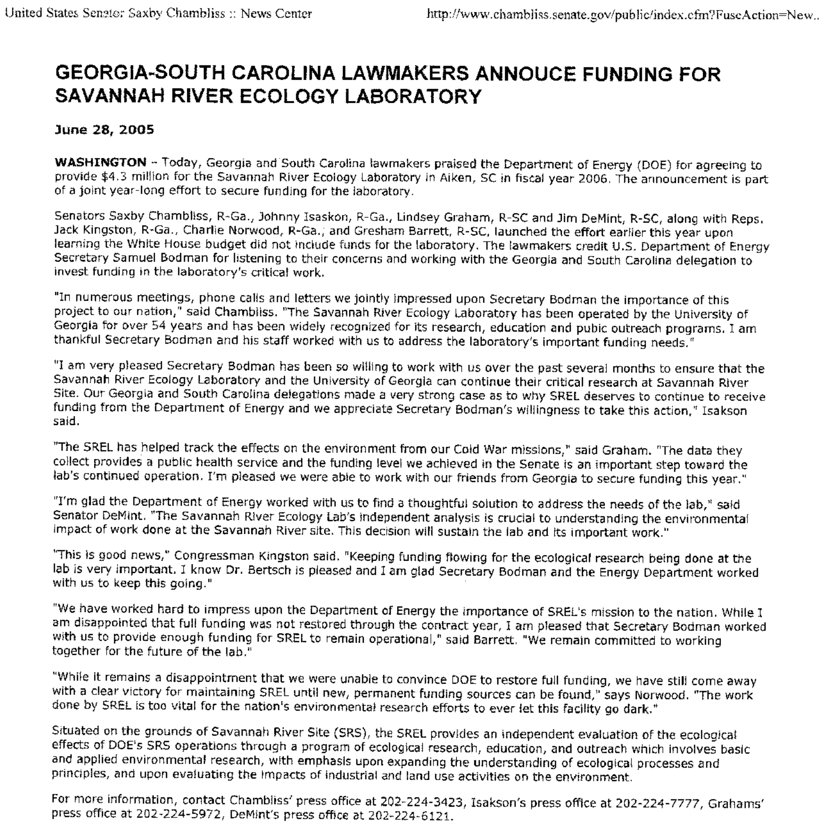
"SREL will need to downsize and develop areas of focus commensurate with federal grant funding priorities," he said.

The funding for the lab will allow it to remain open through the current contract term, which expires June 30, 2006, but underscores the importance of adding non-DOE funding for future operations.

"SREL will need to engage partnerships with other state, federal and private entities," Patel said.

Paul Bertsch, director of the lab, said that the terminations were unfortunate necessities as a result of the budget slash. Founded in 1951 at SRS, ecology lab scientists conduct research on a wide range of topics, including wildlife ecology, soil ecology, forest management and radiation ecology.

More than 100 research articles are published each year in national and international scientific journals by SREL staffers.



GEORGIA-SOUTH CAROLINA LAWMAKERS ANNOUCE FUNDING FOR SAVANNAH RIVER ECOLOGY LABORATORY

June 28, 2005

WASHINGTON – Today, Georgia and South Carolina lawmakers praised the Department of Energy (DOE) for agreeing to provide $4.3 million for the Savannah River Ecology Laboratory in Aiken, SC in fiscal year 2006. The announcement is part of a joint year-long effort to secure funding for the laboratory.

Senators Saxby Chambliss, R-Ga., Johnny Isaskon, R-Ga., Lindsey Graham, R-SC and Jim DeMint, R-SC, along with Reps. Jack Kingston, R-Ga., Charlie Norwood, R-Ga., and Gresham Barrett, R-SC, launched the effort earlier this year upon learning the White House budget did not include funds for the laboratory. The lawmakers credit U.S. Department of Energy Secretary Samuel Bodman for listening to their concerns and working with the Georgia and South Carolina delegation to invest funding in the laboratory's critical work.

"In numerous meetings, phone calls and letters we jointly impressed upon Secretary Bodman the importance of this project to our nation," said Chambliss. "The Savannah River Ecology Laboratory has been operated by the University of Georgia for over 54 years and has been widely recognized for its research, education and pubic outreach programs. I am thankful Secretary Bodman and his staff worked with us to address the laboratory's important funding needs."

"I am very pleased Secretary Bodman has been so willing to work with us over the past several months to ensure that the Savannah River Ecology Laboratory and the University of Georgia can continue their critical research at Savannah River Site. Our Georgia and South Carolina delegations made a very strong case as to why SREL deserves to continue to receive funding from the Department of Energy and we appreciate Secretary Bodman's willingness to take this action," Isakson said.

"The SREL has helped track the effects on the environment from our Cold War missions," said Graham. "The data they collect provides a public health service and the funding level we achieved in the Senate is an important step toward the lab's continued operation. I'm pleased we were able to work with our friends from Georgia to secure funding this year."

"I'm glad the Department of Energy worked with us to find a thoughtful solution to address the needs of the lab," said Senator DeMint. "The Savannah River Ecology Lab's independent analysis is crucial to understanding the environmental impact of work done at the Savannah River site. This decision will sustain the lab and its important work."

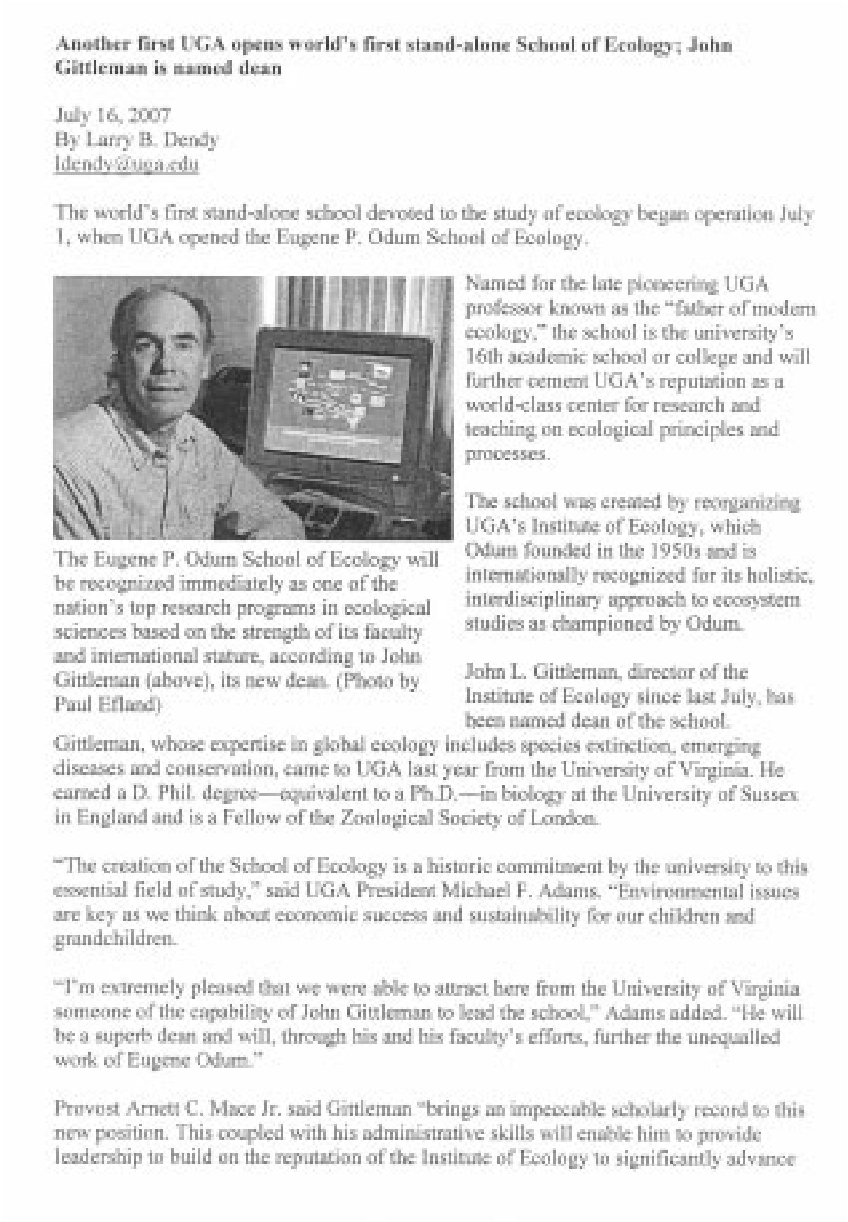
"This is good news," Congressman Kingston said. "Keeping funding flowing for the ecological research being done at the lab is very important. I know Dr. Bertsch is pleased and I am glad Secretary Bodman and the Energy Department worked with us to keep this going."

"We have worked hard to impress upon the Department of Energy the importance of SREL's mission to the nation. While I am disappointed that full funding was not restored through the contract year, I am pleased that Secretary Bodman worked with us to provide enough funding for SREL to remain operational," said Barrett. "We remain committed to working together for the future of the lab."

"While it remains a disappointment that we were unable to convince DOE to restore full funding, we have still come away with a clear victory for maintaining SREL until new, permanent funding sources can be found," says Norwood. "The work done by SREL is too vital for the nation's environmental research efforts to ever let this facility go dark."

Situated on the grounds of Savannah River Site (SRS), the SREL provides an independent evaluation of the ecological effects of DOE's SRS operations through a program of ecological research, education, and outreach which involves basic and applied environmental research, with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of industrial and land use activities on the environment.

For more information, contact Chambliss' press office at 202-224-3423, Isakson's press office at 202-224-7777, Grahams' press office at 202-224-5972, DeMint's press office at 202-224-6121.



Another first UGA opens world's first stand-alone School of Ecology; John Gittleman is named dean

July 16, 2007
By Larry B. Dendy
ldendy@uga.edu

The world's first stand-alone school devoted to the study of ecology began operation July 1, when UGA opened the Eugene P. Odum School of Ecology.

The Eugene P. Odum School of Ecology will be recognized immediately as one of the nation's top research programs in ecological sciences based on the strength of its faculty and international stature, according to John Gittleman (above), its new dean. (Photo by Paul Efland)

Named for the late pioneering UGA professor known as the "father of modern ecology," the school is the university's 16th academic school or college and will further cement UGA's reputation as a world-class center for research and teaching on ecological principles and processes.

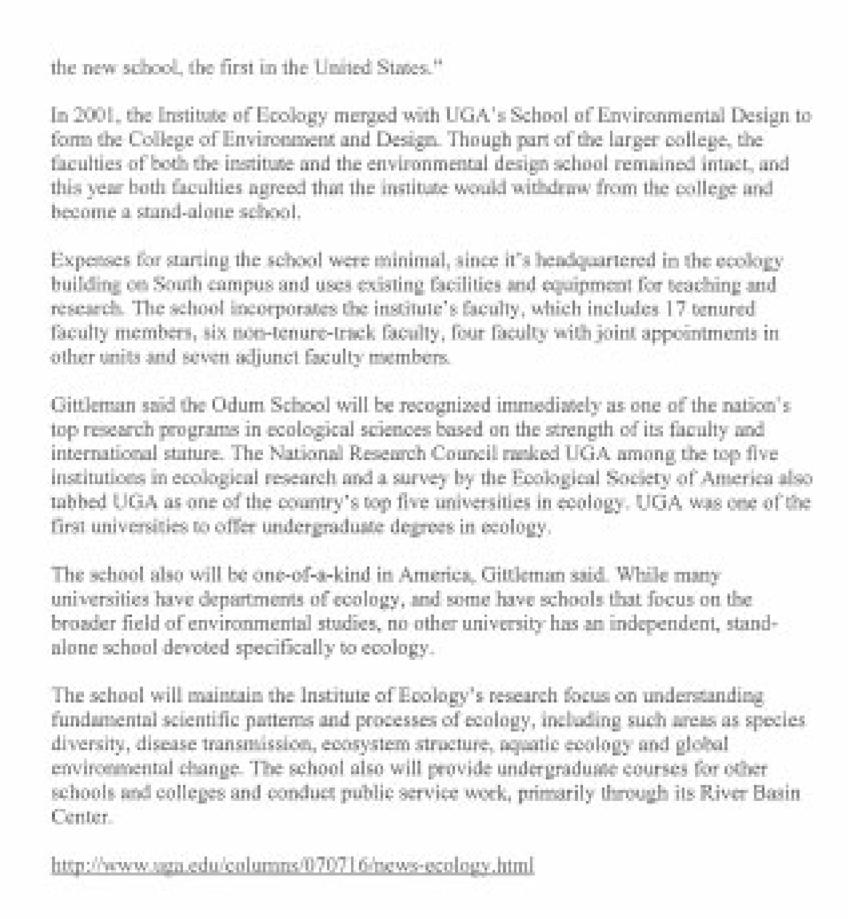
The school was created by reorganizing UGA's Institute of Ecology, which Odum founded in the 1950s and is internationally recognized for its holistic, interdisciplinary approach to ecosystem studies as championed by Odum.

John L. Gittleman, director of the Institute of Ecology since last July, has been named dean of the school. Gittleman, whose expertise in global ecology includes species extinction, emerging diseases and conservation, came to UGA last year from the University of Virginia. He earned a D. Phil. degree—equivalent to a Ph.D.—in biology at the University of Sussex in England and is a Fellow of the Zoological Society of London.

"The creation of the School of Ecology is a historic commitment by the university to this essential field of study," said UGA President Michael F. Adams. "Environmental issues are key as we think about economic success and sustainability for our children and grandchildren.

"I'm extremely pleased that we were able to attract here from the University of Virginia someone of the capability of John Gittleman to lead the school," Adams added. "He will be a superb dean and will, through his and his faculty's efforts, further the unequalled work of Eugene Odum."

Provost Arnett C. Mace Jr. said Gittleman "brings an impeccable scholarly record to this new position. This coupled with his administrative skills will enable him to provide leadership to build on the reputation of the Institute of Ecology to significantly advance



the new school, the first in the United States."

In 2001, the Institute of Ecology merged with UGA's School of Environmental Design to form the College of Environment and Design. Though part of the larger college, the faculties of both the institute and the environmental design school remained intact, and this year both faculties agreed that the institute would withdraw from the college and become a stand-alone school.

Expenses for starting the school were minimal, since it's headquartered in the ecology building on South campus and uses existing facilities and equipment for teaching and research. The school incorporates the institute's faculty, which includes 17 tenured faculty members, six non-tenure-track faculty, four faculty with joint appointments in other units and seven adjunct faculty members.

Gittleman said the Odum School will be recognized immediately as one of the nation's top research programs in ecological sciences based on the strength of its faculty and international stature. The National Research Council ranked UGA among the top five institutions in ecological research and a survey by the Ecological Society of America also tabbed UGA as one of the country's top five universities in ecology. UGA was one of the first universities to offer undergraduate degrees in ecology.

The school also will be one-of-a-kind in America, Gittleman said. While many universities have departments of ecology, and some have schools that focus on the broader field of environmental studies, no other university has an independent, stand-alone school devoted specifically to ecology.

The school will maintain the Institute of Ecology's research focus on understanding fundamental scientific patterns and processes of ecology, including such areas as species diversity, disease transmission, ecosystem structure, aquatic ecology and global environmental change. The school also will provide undergraduate courses for other schools and colleges and conduct public service work, primarily through its River Basin Center.

http://www.uga.edu/columns/070716/news-ecology.html

In December of 2006, the Savannah River Site and the University of Georgia signed a new cooperative agreement that captured the terms made by the parties in 2005. The cooperative agreement provided the Savannah River Ecology Laboratory with $1 million in guaranteed funding for infrastructure in 2007 and a mechanism to receive additional funding for research projects on a task-by-task basis as determined by programmatic need and funding availability. Under that framework, SREL proposed 27 tasks. These tasks were reviewed by Savannah River Site personnel and it was determined that six tasks, totaling approximately $800,000, met critical program needs for the Office of Environmental Management. In addition, the National Nuclear Security Administration funded two additional tasks totaling $435,000 in fiscal year 2007.

In May of this year the Department met with University officials to discuss potential paths forward. I was disappointed that given the self-declared funding crisis at the laboratory, the University did not come to the meeting with any concrete plans for how it would move to refocus the laboratory so that it would become self-sustaining. In a subsequent phone call between Secretary Bodman and University President Adams on June 1, President Adams committed to providing the Department with a plan for the future of the laboratory. The Department has yet to receive a response to this request. The Department has received a closure plan unrelated to the Secretary's request which fails to identify either clear objectives and activities or the funding and key personnel associated with those activities.

The Department will continue to honor the commitments it made, as laid out in the cooperative agreement, just as it has met all of its commitments to the Savannah River Ecology Laboratory to this point. And I would be pleased to answer any questions you may have.

[The prepared statement of Mr. Anderson follows:]

PREPARED STATEMENT OF CHARLES E. ANDERSON

Good morning Chairman Miller, Chairman Lampson, Ranking Members Sensenbrenner and Inglis and Members of the Committee. My name is Charlie Anderson and I am the Principal Deputy Assistant Secretary for the Department of Energy's Office of Environmental Management. In that role, I am the program's senior career federal officer and manage the day to day operations of the organization. I appreciate the opportunity to come here today to discuss with you the timeline and decisions made by the Department that has resulted in my appearance here today.

Deputy Secretary Sell has provided you with an overview of the events. My testimony today will provide details on my specific role in decisions made, discussions with the University of Georgia, Members of Congress and my staff, and direction given relative to the Savannah River Ecology Laboratory.

Although the Savannah River Ecology Laboratory is located on the Savannah River Site, it is managed by the University of Georgia. The Department expected the University to take leadership in setting the course for the Laboratory's future. The Office of Science made tough budget and programmatic decisions for fiscal year 2006. As a result, the Savannah River Ecology Laboratory no longer would receive direct funding from the Department of Energy outside of successfully peer reviewed proposals for mission relevant research. At that time, the Department received letters from both the Georgia and South Carolina Congressional delegations requesting restoration of the Laboratory's direct funding.

In May 2005, the Assistant Secretary for Congressional and Intergovernmental Affairs, and I helped negotiate an agreement among the Department, the Laboratory, the University of Georgia and Members of both the South Carolina and Georgia Congressional delegations.

We agreed that the Office of Environmental Management would provide an additional $3 million dollars in fiscal year 2006, with the Department providing a total of approximately $4.3 million in funds for the Laboratory in FY06. The Office of Environmental Management would then provide $1 million in fiscal year 2007 for infrastructure along with additional funds for research projects to be provided on a task-by-task basis. Additionally, for its part, the University of Georgia agreed to provide $1 million for infrastructure in support of its Laboratory in fiscal year 2007.

The basis of the Department's agreement to provide additional funding in 2007 was the commitment by the Savannah River Ecology Laboratory and the University of Georgia to seek outside funding sources and to become self-sustaining. This is exactly how our National Laboratory at Savannah River is funded. I will note former Savannah River Ecology Laboratory Director Paul Bertsch's understanding of this arrangement when he was quoted in a July 11, 2005 University of Georgia Campus News article as ". . .we are grateful that our Congressional delegations have seen fit to give us a year to develop alternative funding sources." I would ask the Committee to include this press article in the hearing record.

In December of 2006, the Savannah River Site and the University of Georgia signed a new cooperative agreement that captured the terms made by the parties in 2005. The cooperative agreement provided the Savannah River Ecology Laboratory with $1 million in guaranteed funding for infrastructure in 2007 and a mechanism to receive additional funding for research projects on a task-by-task basis as determined by programmatic need and funding availability. Under that framework, SREL proposed 27 tasks. These tasks were reviewed by Savannah River Site personnel and it was determined that six tasks, totaling approximately $800,000, met critical program needs for the Office of Environmental Management. In addition, the National Nuclear Security Administration funded two additional tasks totaling $435,000 in fiscal year 2007.

In May of this year the Department met with University officials to discuss potential paths forward. I was disappointed that given the self-declared "funding crisis" at the Laboratory, the University did not come to the meeting with any concrete plans for how it would move to refocus the Laboratory so that it would become self-sustaining. In a subsequent phone call between Secretary Bodman and University President Adams on June 1, 2007, President Adams committed to providing the Department with a plan for the future of the Laboratory. The Department has yet to receive a response to this request. The Department has received a closure plan unrelated to the Secretary's request which fails to identify either clear objectives and activities or the funding and key personnel associated with those activities.

The Department will continue to honor the commitments it made as laid out in the cooperative agreement just as it has met all of its commitments to the Savannah River Ecology Laboratory to this point.

I would be pleased to answer any questions.

BIOGRAPHY FOR CHARLES E. ANDERSON

Charlie Anderson was named Principal Deputy Assistant Secretary, Office of Environmental Management, U.S. Department of Energy (DOE), on May 8, 2005.

Before his appointment to DOE Headquarters, Mr. Anderson served as the Deputy Manager for Cleanup at DOE's Savannah River Operations Office (SR). In this role since June 2003, he assisted the SR Manager in providing overall leadership and direction for oversight of contractor and federal programs, including nuclear material stabilization; waste disposition; closure; environment, safety and health; cleanup projects management and integration; and safeguards, security and emergency services. These functions were performed in support of the Environmental Management risk reduction and accelerated cleanup mission performed at the Savannah River Site (SRS).

Mr. Anderson's career spans more than 20 years of experience in executive, technical, operations, program management, and project management of nuclear materials disposition, nuclear materials production, nuclear waste management, and nuclear and coal-fired power generation programs with the Department of Energy and the Tennessee Valley Authority (TVA).

Mr. Anderson began his career with TVA as a construction project engineer at the Yellow Creek Nuclear Plant. He then relocated to TVA's corporate engineering office where he held several systems engineering positions. He moved on to the Browns Ferry Nuclear Plant to lead the system engineering efforts and later served as Special Projects Manager for the program management of multi-discipline, site-wide problem recovery projects.

In 1990, he joined DOE at the Savannah River Site as Chief, High Level Waste Tank Farm Branch and also held positions as Director, Liquid Waste Division; Director, Engineering Division; and Special Assistant for Process Re-engineering, High Level Waste System. Additionally, Mr. Anderson has provided innovative and sound leadership in SRS management positions that included: Director, Nuclear Material Storage Division; Director, Reactors and Spent Fuel Division; Director, High Level Waste Program Division.

In October 2000, Mr. Anderson was named the Director, Office of Defense Nuclear Nonproliferation, Savannah River Area Office of DOE's National Nuclear Security Administration. He directed the management of plutonium and uranium disposition programs and other special nuclear nonproliferation programs.

In February 2001, he was named the Assistant Manager for High Level Waste at DOE–SR. He was responsible for all aspects of nuclear operations for high level waste at SRS, including the Defense Waste Processing Facility, the High Level Waste Tank Farms, and the alternative Salt Waste Processing Program.

A native of Memphis, Tennessee, Mr. Anderson holds a Bachelor of Science degree in Mechanical Engineering from Memphis State University.

Chairman MILLER. Thank you. Mr. Allison for five minutes.

STATEMENT OF MR. JEFFREY M. ALLISON, MANAGER, U.S. DEPARTMENT OF ENERGY—SAVANNAH RIVER OPERATIONS OFFICE

Mr. ALLISON. Chairman Miller, Ranking Member Sensenbrenner and Mr. Hall, thank you for the opportunity today to convey the Department of Energy's Savannah River Site priorities and to share my insights into the Department's funding decisions relative to the Savannah River Ecology Laboratory, which we call SREL. In doing so, I am hopeful that I can clarify some misconceptions and misrepresentations.

At the Savannah River Site, our primary mission since the end of the Cold War has been dispositioning nuclear materials and waste. Because of the investments in our cleanup, SRS continues to make significant progress in meeting our current mission critical priorities to process and disposition liquid waste to reduce risk, support nuclear materials stabilization and disposition, remediate soil and groundwater, and disposition excess facilities.

We work closely with regulators who have oversight of SRS activities. We also fund environmental and ecological studies to take a closer look at potential longer-term effects on soil, water and wildlife. For the past five decades the Savannah River Ecology Laboratory, or SREL as we call it, has performed a number of these studies for the Savannah River Site.

At DOE Headquarters' direction, DOE- Savannah River allocated $3 million from within available funds to SREL for fiscal year 2006 and began preparing a new cooperative agreement to establish the framework for future SREL activities. And that was discussed in a memorandum from Mr. Charles Anderson to me in June 2005 and it has been discussed several times today in the session. A new five-year agreement prepared by DOE-SR was based on fiscal year 2006 funding of $4 million for SREL. The requested funding of $4 million for fiscal year 2007 served as a planning base until Congress acted and funds were appropriated. Planning assumptions are common for us to use in establishing future work scope activities until funding is committed and appropriated by Congress. Once appropriated, subsequent adjustments are made to funding and work scope as needed.

In September 2006, SR sent to DOE Headquarters the cooperative agreement negotiated with SREL. It was at that time that I learned of specific terms of an agreement that had previously been reached by DOE Headquarters and the University of Georgia in 2005 and communicated to some Members of Congress.

With DOE Headquarters' input, the cooperative agreement was revised based on the terms reached in 2005. The cooperative agreement obligated fiscal year 2007 funding from DOE's Office of Environmental Management of $1 million for SREL infrastructure and potentially up to $3 million for scientific research projects that met specific criteria. Additional conditions stipulated that beyond fiscal year 2007 there would be no DOE funding commitment for the SREL. For fiscal years 2008 and beyond, DOE agreed to fund individual SREL projects based on need, merit of the proposals and funding availability. The cooperative agreement also allows the University of Georgia to continue to operate SREL on the Savannah River Site property and is structured to encourage them to seek research funding for work from DOE and non-DOE entities. These terms and conditions were formalized in the current cooperative agreement signed by both parties in November and December 2006.

Since that time, research projects ranging from ecological studies to radiation effect studies have been proposed by SREL. DOE–SR federal project directors reviewed these projects against the current priority cleanup activities planned for the Savannah River Site to determine if the project supported accomplishing prioritized work scope. From this review, DOE-SR ultimately chose to fund six of the 27 proposed tasks because those six supported program missions. DOE Headquarters supported the field's decision.

As you have heard here today, dating back to 2005, the Department had to make tough funding decisions in light of sound management principles, reduced budgets and a desire to ensure top-quality science, resulting in DOE's expanded efforts to manage its contracts through competitive solicitations and awards. Savannah River was not exempt. The Department's decision in 2005 to eliminate funding for surficial science did not discount the quality of the scientific research or educational outreach activities conducted by SREL. Rather, that funding decision and many others since have been driven by the need to balance SRS work to meet the mission critical priorities of the Department.

DOE is committed to executing the cooperative agreement with the University of Georgia under the specified terms and conditions. And I believe, to this point, we have met all of our commitments under that cooperative agreement. Personally, it is regrettable that a lack of communication and misperceptions resulted in confusing and complicating this matter. DOE recognizes SREL's contributions to environmental research and ecological studies and we are hopeful that the lab will compete to conduct future work at SRS. Thank you.

[The prepared statement of Mr. Allison follows:]

PREPARED STATEMENT OF JEFFREY M. ALLISON

Chairman Miller, Chairman Lampson, and Subcommittee Members: Thank you for the opportunity today to convey the Department of Energy's (DOE) Savannah River Site (SRS) priorities and to share my insight into the Department's funding decisions relative to the Savannah River Ecology Laboratory (SREL). In doing so, I am hopeful that I can clarify some misconceptions and misrepresentations.

At the Savannah River Site, our primary mission since the end of the Cold War has been dispositioning nuclear materials and waste. Because of investments in our cleanup, SRS continues to make significant progress in meeting our current mission critical priorities to process and disposition liquid waste to reduce risk; support nuclear materials stabilization and disposition; remediate soil and groundwater; and disposition excess facilities.

Additionally, a critical part of the work that we do at SRS is routine monitoring of our cleanup work to ensure the health and safety of our workers, the public, and the surrounding environment. We work closely with regulators who have oversight of SRS activities. We also fund environmental and ecological studies to take a closer look at potential longer-term effects on soil, water and wildlife. For the past five decades, the Savannah River Ecology Laboratory, or SREL, has performed a number of these studies for the Savannah River Site.

At DOE–Headquarters' (HQ) direction, DOE–Savannah River (SR) allocated $3M from available funds to SREL for Fiscal Year 2006 and began preparing a new Cooperative Agreement to establish the framework for future SREL activities. The new five-year agreement prepared by DOE–SR was based on Fiscal Year 2006 funding of $4M for SREL. The requested funding of $4M for Fiscal Year 2007 served as a "planning base" until Congress acted and funds were appropriated. Planning assumptions are common to us for establishing future work scope activities until funding is committed and appropriated by Congress. Once appropriated, subsequent adjustments are made to funding and work scope as needed.

In September 2006, SR sent to DOE–HQ the Cooperative Agreement negotiated with SREL. It was at that time that I learned of specific terms of an agreement that had previously been reached by DOE–HQ and the University of Georgia in 2005 and communicated to some Members of Congress.

With DOE–HQ input, the Cooperative Agreement was revised based on the terms reached in 2005. The Cooperative Agreement obligated Fiscal Year 2007 funding from DOE's Office of Environmental Management (EM) of $1 million for SREL infrastructure and potentially up to $3 million for scientific research projects that met specific criterion. Additional conditions stipulated that beyond FY 2007 there would be no DOE funding commitment for the SREL. For Fiscal Year 2008 and beyond, DOE agreed to fund individual SREL projects based on need, merit of the proposals, and funding availability. The Cooperative Agreement also allows the University of Georgia to continue to operate SREL on the Savannah River Site property and is structured to encourage them to seek research funding for work from DOE and non-DOE entities. These terms and conditions were formalized in the current Cooperative Agreement signed by both parties in November/December 2006.

Since that time, research projects ranging from ecological studies to radiation effect studies have been proposed by SREL. DOE–SR Federal Project Directors reviewed these projects against the current priority cleanup activities planned for the Savannah River Site to determine if the projects supported accomplishing prioritized work scope. From this review, DOE–SR ultimately chose to fund six of the 27 proposed tasks because those six supported program missions. DOE–HQ supported the field's decision.

As you have heard here today, dating back to 2005, the Department had to make tough funding decisions in light of sound management principles, reduced budgets, and a desire to ensure top-quality science, resulting in DOE's expanded efforts to manage its contracts through competitive solicitation and awards. Savannah River was not exempt. The Department's decision in 2005 to eliminate funding for surficial science did not discount the quality of the scientific research or educational outreach activities conducted by SREL. Rather, that funding decision and many others since have been driven by the need to balance SRS work to meet the mission critical priorities of the Department.

DOE is committed to executing the Cooperative Agreement with the University of Georgia under the specified terms and conditions.

Personally, it is regrettable that a lack of communication and misperceptions resulted in confusing and complicating this matter. DOE recognizes SREL's contributions to environmental research and ecological studies, and we are hopeful that the lab will compete to conduct future work at SRS. Thank you.

BIOGRAPHY FOR JEFFREY M. ALLISON

Jeffrey M. Allison was appointed Manager of the Savannah River Operations Office (SR) in March 2003. Mr. Allison is a career member of the Senior Executive Service with more than 22 years of experience in engineering, safety, health, process development, and management of Department of Energy (DOE) nuclear facilities, including chemical processing facilities, waste management facilities, and laboratories.

Prior to his current assignment, Mr. Allison was SR's Acting Manager from June 2002. As SR's Assistant Manager for Health, Safety and Technical Support from December 1999 to June 2002, he led the Savannah River Site in implementing a model Integrated Safety Management System. Additionally, he was directing and overseeing Site efforts in a range of areas such as engineering, construction management, project management, regulatory and safety compliance, nuclear safety documentation, emergency preparedness and others.

Mr. Allison has held several other senior level positions at the Savannah River Site, including Acting Assistant Manager for High-Level Waste from December 2000 through February 2001. In this position, he directed and oversaw operations of the high-level waste system, including the Defense Waste Processing Facility, H and F Tank Farms, the Effluent Treatment Facility, Saltstone, and other components of the waste system. From June 1996 through November 1999, Mr. Allison was the Deputy Assistant Manager for Health, Safety and Technical Support, and prior to that Mr. Allison was the Deputy Assistant Manager for Engineering and Projects from April 1995 to May 1996. As Deputy Assistant Manager for Engineering and Projects, Mr. Allison led the Site in achieving significant cost-saving accomplishments, including the privatization of the D–Area Powerhouse, implementation of commercial business practices in all non-nuclear infrastructure facilities; and increased utilization of fixed-price contracting for design, engineering and construction activities.

Mr. Allison began his federal service in the Department's High-Level Waste Division, Office of Environmental Management, DOE Headquarters, in December 1991, as a team leader. In this role, he was responsible for overseeing all programmatic aspects of the Savannah River Site Tank Farms and developing the Waste Acceptance Product Specifications for use in establishing criteria for acceptance of waste at the geological repository.

Prior to joining the Department, Mr. Allison worked eight years for Westinghouse Hanford Company in a range of ever increasing engineering assignments, including process simulation, process design/development, systems engineering, design engineering and hazardous waste disposal.

Mr. Allison holds a Bachelor of Science, Engineering degree in Chemical Engineering from Princeton University.

Chairman MILLER. Mr. Gilbertson, your written testimony is minimal, but your conduct seems to be an important part of all of this. You have sat here all morning and heard it described. My proposal is that you take five minutes and describe, extemporaneously, your conduct in the last six months as it relates to this laboratory. We would prefer to have had it in writing, but if you would explain it now, please do so.

Mr. GILBERTSON. Sure, I would be happy to, for the Committee.

STATEMENT OF MR. MARK A. GILBERTSON, DEPUTY ASSISTANT SECRETARY FOR ENGINEERING AND TECHNOLOGY, OFFICE OF ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Mr. GILBERTSON. First of all, good afternoon, Chairman Miller and Ranking Member Sensenbrenner and Congressman Hall. I am the Deputy Assistant Secretary for Engineering and Technology and as a part of that role, one of my functions is to perform independent technical review and oversight of the environmental management activities, programs and projects, and so I am here today to answer questions associated with that. I manage the entire Environmental Management, Engineering and Technology Program, which includes technology development and deployment. My role here is at not only Savannah River, but other sites, to ensure that the work that is performed at our sites is leveraged to the advantage of all sites. And particularly, my role here was an oversight role. And so with regard to that, my role here was to review the conduct of the Savannah River Site, to work with them to ensure that the cooperative agreement was implemented consistent with negotiations and the direction of the Secretary.

I sent a memo to Jeff in January of 2007 to inform him about our intent to conduct a peer review for scientific merit of the SREL research, and then we would work with the site, where the site would conduct the relevancy review or the review to ensure that the projects met the needs of the site overall. The descriptions of the work came up to headquarters. We reviewed the annual plan. We did not do a formal peer review of that process. When we received the descriptions of the activities, we saw that a number of the activities were ongoing activities. We contacted the Office of Science, who had the responsibility to manage that work in past years, and found in discussions with them that the quality of the science that is being performed at SREL, which is typically the reason why you do peer reviews, is to measure the quality of the science that is being proposed, was high quality, that it was sound science.

And so then we worked with the site on ensuring that the projects and tasks that were being proposed for work by the laboratory itself met the needs for projects. In environmental management our cleanup work is all prioritized. It has activities that we need to accomplish in particular fiscal years and project managers at the sites are the ones that manage those activities. And so we worked with the site, to communicate back and forth about the nature of that, and to ask that project managers at the Savannah River Site review the work that was being proposed by the Savannah River Ecology Laboratory to ensure that it met the needs of those particular projects.

My role in this part of the process has been through that review of the work itself. It has also been subsequent to that part of the activity. I have interfaced with the University of Georgia, with Dr. Lee, on numerous occasions to try and understand where the laboratory was going in the future, with regard to future directions, trying to understand the issues of—we were told that we would close, that they were going to close. I am yet in discussions with Dr. Lee. It was pretty clear that they were—they still wanted to remain and were going to transition to something else. And so my role has been working with the University of Georgia to try and understand the direction that it is going in, to try and support that. We value the support of the Savannah River Ecology Laboratory and the University of Georgia going into the future and we have been trying to work with them to ensure that it is a self-sustaining, enduring entity that supports not only our program but supports the National Nuclear Security Administration (NNSA) programs, supports the Office of Science, other federal agencies. And so that is the role that I have been playing.

[The prepared statement of Mr. Gilbertson follows:]

PREPARED STATEMENT OF MARK A. GILBERTSON

Good morning Chairman Miller, Chairman Lampson, Ranking Members Sensenbrenner and Inglis and Members of the Subcommittees. My name is Mark Gilbertson and I am the Deputy Assistant Secretary for Engineering and Technology in the Department of Energy's Office of Environmental Management. In that role, I am charged with the responsibility of reducing the technical risk and uncertainty in the Department's cleanup programs and projects. To reduce those risks, my program provides technical solutions where none exist, improved solutions that enhance safety and operating efficiency, or alternatives that reduce programmatic risks (costs, schedule, or effectiveness). In addition, my organization provides independent technical review of Environmental Management activities, programs and/or projects.

I appreciate the opportunity to come here today to discuss with you the timeline and decisions made by the Department that has resulted in my appearance here today.

I would be pleased to answer any questions.

BIOGRAPHY FOR MARK A. GILBERTSON

Mr. Mark Gilbertson is currently the Deputy Assistant Secretary for Engineering and Technology within the Office of Environmental Management (EM). The objective of this organization is to reduce the technical risk and uncertainty in the Department's cleanup programs and projects. To reduce those risks, the Program provides technical solutions where none exist, improved solutions that enhance safety and operating efficiency, or alternatives that reduce programmatic risks (costs, schedule, or effectiveness).

Up until 2003, Mr. Gilbertson was the Director of the Office of Basic and Applied Research within the EM Program at the Department of Energy charged with providing the fundamental knowledge necessary to correct problems associated with the cleanup of the nuclear weapons production complex. The program was given a "Hammer" Award by the Vice President's National Performance Review Team in 1998. In his first five years with the EM Program, Mr. Gilbertson was responsible for the development of policy, requirements, and guidance to ensure that risk analysis theory and processes were integrated into coherent decision-making processes in the Department of Energy's multi-billion dollar environmental cleanup program. From 1988 to 1994, Mr. Gilbertson worked in the Department's Office of Environment, Safety and Health (EH) and was responsible for the integration of EH concerns into Departmental planning processes, and managing and conducting EH's Progress Assessment and Tiger Team programs. He received a Silver Medal for Meritorious Service in 1991 and was promoted into the Senior Executive Service in May of 1992.

Mr. Gilbertson spent four years at the U.S. Environmental Protection Agency (EPA). In his last year at EPA, he served as Director of EPA's Hazardous Waste Ground-Water Task Force Investigation Activities, created to investigate the adequacy of groundwater monitoring at facilities that disposed of hazardous waste on land. During his first three years at EPA, he supported the development of *Resource Conservation and Recovery Act*

regulations and technical guidance and training in the areas of corrective action, waste management, and environmental monitoring. He received a Bronze Medal for Commendable Service in 1987. He also spent three years in the private sector with an environmental engineering consulting firm.

Mr. Gilbertson received a B.S. in Chemical Engineering from the University of Wisconsin in 1981.

Chairman MILLER. Ms. Collazo for five minutes.

STATEMENT OF MS. YVETTE T. COLLAZO, ASSISTANT MANAGER FOR CLOSURE PROJECT, SAVANNAH RIVER OPERATIONS OFFICE, U.S. DEPARTMENT OF ENERGY

Ms. COLLAZO. Good afternoon, Chairman Miller, Chairman Lampson and Subcommittee Members. I am Yvette Collazo and in May of 2006, I was appointed the Assistant Manager for Closure Project at the U.S. Department of Energy Savannah River Operations Office. In that capacity, I oversee contractors, federal programs, and activities associated with the cleanup of radiological and chemical contaminants in buildings and the environment, resulting from more than 40 years of nuclear materials production at the Savannah River Site. Programmatic oversight of the Savannah River Ecology Laboratory became my responsibility in February of 2007, following an organizational realignment at the DOE–Savannah River. Primarily, it is in this capacity that I am here today to share my knowledge and address my role relative to the Department's funding decisions for SREL.

Prior to assuming oversight responsibility for the laboratory, I would like to add that I, along with other DOE–SR line organization managers, participated in discussions and evaluations of SREL fiscal year 2007 research activities during the fall of 2006. As you have heard Mr. Allison previously state, based on planning assumptions in early 2006 for future SREL work, DOE–SR was planning to fund SREL at $4 million in fiscal year 2007. As part of that planning base, available funding to support SREL research activities in fiscal year 2007 was evaluated by each of the DOE–SR line organizations, including my program area.

Upon acquiring oversight of the laboratory, I had several meetings and discussions with SREL leadership regarding implementation of the 2006 cooperative agreement, as revised to incorporate the terms of the 2005 agreement with the University of Georgia. During this time I consistently restated the terms and conditions upheld in the mutual agreement, and those are $1 million guaranteed DOE funding in fiscal year 2007 for infrastructure, no DOE funding commitment for fiscal year 2008 and beyond, and a task-by-task evaluation by DOE based on need, merit and also funding availability. Additionally, SREL was strongly encouraged to seek alternative funding sources.

In January 2007, DOE–SR received direction from the Office of Environmental Management at DOE Headquarters to work jointly to determine a path forward for funding support of any additional tasks at SREL in fiscal year 2007. SREL initially proposed 35 tasks, which were later revised to 27, for task-by-task funding consideration. EM Headquarters stated its intent to conduct a peer review for scientific merit of these tasks and DOE–SR was directed to conduct a relevancy review to determine if the proposed tasks met SRS needs and priorities.

In concert with the terms of the cooperative agreement, SREL-proposed tasks were reviewed by DOE–SR line organizations based on need. This is a typical process whereby DOE–SR determines if a proposed task or projects meets a need, directly supports SRS priorities, and is fundamental to accomplishing critical work scope. In February 2007, EM Headquarters emphasized the critical DOE need test in conducting the task-by-task review. The DOE–SR review identified six of the 27 SREL-proposed tasks as meeting a critical SRS need. In March 2007, DOE–SR communicated the results of the review to EM Headquarters.

In April 2007, I met with EM Headquarters to go over the results of the DOE–SR review. Based on its programmatic review, EM Headquarters also determined that most of the SREL-proposed projects did not meet the mission critical cleanup needs at the Savannah River Site. EM Headquarters recommended that funding from EM be awarded at $1.8 million, which included guaranteed support for infrastructure. As directed in May of 2007, DOE–SR informed SREL of the EM funding level.

I am aware that there has been a lot of discussion on the meaning of mission critical as it applies to DOE'S review of SREL's proposed tasks. I would like to re-emphasize that the review conducted by DOE–SR line organizations was based on need, which is synonymous with priority and mission critical when determining if a proposed task or project is a must do. As a career public servant, I am very cognizant of the difficult but necessary task of balancing the work and available dollars to get the required job done.

This is the extent of my knowledge and short-term role relative to the Department's funding decisions for SREL. In summary, I would simply re-emphasize that prior to the signing of the cooperative agreement in December of 2006, a good faith effort was made by DOE–SR line organizations, of which I was a part, to evaluate support of SREL research activities, given the planning assumptions in earlier 2006. Since the mutual agreement was finalized or formalized, I believe that DOE has respectfully and consistently met its commitment under the current terms and conditions of the cooperative agreement with the Savannah River Ecology Laboratory. Thank you.

[The prepared statement of Ms. Collazo follows:]

PREPARED STATEMENT OF YVETTE T. COLLAZO

Good Morning. Chairman Miller, Chairman Lampson, and Subcommittee Members. In May 2006, I was appointed the Assistant Manager for Closure Project at the U.S. Department of Energy (DOE) Savannah River Operations Office (SR). In that capacity, I oversee contractors, federal programs and activities associated with the cleanup of radiological and chemical contaminants in buildings and the environment resulting from more than 40 years of nuclear materials production at the Savannah River Site (SRS). Programmatic oversight of the Savannah River Ecology Laboratory (SREL) became my responsibility in February 2007 following an organizational realignment at DOE–SR. Primarily, it is in this capacity that I am here today to share my knowledge and address my role relative to the Department's funding decisions for SREL.

Prior to assuming oversight responsibility for the laboratory, I would like to add that I, along with other DOE–SR line organization managers, participated in discussions and evaluations of SREL Fiscal Year (FY) 2007 research activities during the Fall 2006. As you have heard Mr. Allison previously state, based on planning assumptions in early 2006 for future SREL work, DOE–SR was planning to fund SREL at $4 million in Fiscal Year 2007. As part of that planning base, available funding to support SREL research activities in FY 2007 was evaluated by each of the DOE–SR line organizations, including my program area.

Upon acquiring oversight of the laboratory, I had several meetings and discussions with SREL leadership regarding implementation of the 2006 Cooperative Agreement, as revised to incorporate the terms of the 2005 agreement with the University of Georgia. During this time, I consistently re-stated the terms and conditions upheld in the mutual agreement: $1 million guaranteed DOE funding in Fiscal Year 2007 for infrastructure; no DOE funding commitment for Fiscal Year 2008 and beyond; and task-by-task evaluation by DOE based on need, merit, and funding availability. Additionally, SREL was strongly encouraged to seek alternative funding sources.

In January 2007, DOE–SR received direction from the Office of Environmental Management (EM) at DOE–Headquarters (DOE–HQ) to work jointly to determine a path forward for funding support of any additional tasks at SREL in Fiscal Year 2007. SREL initially proposed 35 tasks, which were later revised to 27, for task-by-task funding consideration. EM–HQ stated its intent to conduct a peer review for scientific merit of these tasks, and DOE–SR was directed to conduct a "relevancy" review to determine if the proposed tasks met SRS needs and priorities.

In concert with the terms of the Cooperative Agreement, SREL-proposed tasks were reviewed by DOE–SR line organizations based on need. This is a typical process whereby DOE–SR determines if a proposed task or project meets a need, directly supports SRS priorities, and is fundamental to accomplishing critical work scope. In February 2007, EM–HQ emphasized the "critical DOE need" test in conducting the task-by-task review. The DOE–SR review identified six of the 27 SREL-proposed tasks as meeting a critical SRS need. In March 2007, DOE–SR communicated the results of the review to EM–HQ.

In April 2007, I met with EM–HQ to go over the results of the DOE–SR review. Based on its programmatic review, EM–HQ also determined that most of the SREL-proposed projects did not meet the mission critical cleanup needs at the Savannah River Site. EM–HQ recommended that funding from EM be awarded at $1,805,000, which included the guaranteed support for infrastructure. As directed, in May 2007, DOE–SR informed SREL of the EM funding level.

I am aware that there has been a lot of discussion on the meaning of mission critical as it applies to DOE's review of SREL's proposed tasks. I would like to re-emphasize that the review conducted by DOE–SR line organizations was based on need, which is synonymous with "priority" and "mission critical" when determining if a proposed task or project is a "must do." As a career public servant, I am very cognizant of the difficult, but necessary, task of balancing the work and available dollars to get the required job done.

This is the extent of my knowledge and short-term role relative to the Department's funding decisions for SREL. In summary, I would simply re-emphasize that prior to the signing of the Cooperative Agreement in December 2006, a good faith effort was made by DOE–SR line organizations, of which I was a part, to evaluate support of SREL research activities given the planning assumptions in earlier 2006. Since the mutual agreement was formalized, I believe that DOE has respectfully and consistently met its commitments under the current terms and conditions of the Cooperative Agreement with the Savannah River Ecology Laboratory. Thank you.

BIOGRAPHY FOR YVETTE T. COLLAZO

Ms. Yvette T. Collazo entered the Senior Executive Service and was appointed the Assistant Manager for Closure Project at the Savannah River Operations Office, Savannah River Site, in May 2006. In this capacity, Yvette provides leadership and oversight direction to contractors, federal programs and activities associated with the clean up of radiological, industrial and groundwater hazards resulting from more than 40 years of nuclear materials production at the 310-square mile federal facility. Yvette is responsible for the ongoing Deactivation and Decommissioning (D&D) of facilities once used for the production of nuclear materials. She also manages the administration of the SRS Citizens Advisory Board, the Environmental Justice Program, and the National Historic Presentation Program.

Prior to her assignment to SRS she was the Director, Program Support Services for the Assistant Manager for Safety, Technical, and Infrastructure Services at the Department of Energy (DOE) Chicago Office (CH). In this capacity she was responsible for leading the CH Plutonium Disposition Program, the Office of Electricity Delivery and Energy Reliability assistance awards, and the Office of Science Congressionally mandated construction grants.

Yvette joined the DOE Argonne Area Office of the Chicago Operations Office in 1991, performing in positions of increasing responsibility that included Environmental Compliance Engineer, Project Manager, and Team Leader for the Environmental Management Program. From 2000 through 2002, she served as the DOE's National Peer Review Coordinator for the Office of Science and Technology and as the Chair of the DOE National Hispanic Employment Program Manager's Advisory Council.

Yvette's major accomplishments include the D&D of the Argonne National Laboratory-East's (ANL–E) Experimental Boiling Water Reactor, JANUS Reactor, Building 212 Plutonium Glove boxes, and Building 200 Hot Cells. She was instrumental in completing a Memorandum of Agreement with the U.S. Department of Agriculture to conduct wildlife management at the ANL–E site. She led the issuance of the *Resource Conservation and Recovery Act* (RCRA) Part B Permit for ANL–E and negotiations with the Illinois Environmental Protection Agency that resulted in a unique RCRA Corrective Action Process with streamlined documentation and a defined completion schedule.

A recipient of a DOE Exceptional Award for her leadership in the CH Environmental Management Program (2005), she also received the National Association of Hispanic Federal Executives Distinguished Public Service Award (2003), a DOE Technology Innovation Silver Award for the Phytoremediation Project (2002) and a Secretary of Energy Award for Achievement in Education and Career Development (1999).

Yvette holds a Master of Science in Environmental Management and a Certificate of Environmental Studies from the Illinois Institute of Technology; and a Bachelor of Science in Mechanical Engineering, from the University of Puerto Rico, Mayaguez Campus.

DISCUSSION

2005 SREL COOPERATIVE AGREEMENT

Chairman MILLER. Thank you. The Chair will now have our first round questions and the Chair recognizes himself for five minutes. Mr. Allison, I would assume that someone heading a $1.2 billion a year facility is a pretty accomplished and savvy guy. But you appear to be treated, in the testimony today by many of the people in the Department of Energy, as something less than that, something other than that. Mr. Anderson directed you to negotiate a new cooperative agreement with SREL in June of 2005, is that correct?

Mr. ALLISON. Yes, that is correct.

Chairman MILLER. Okay. And there was a memo that gave you that direction to negotiate that arrangement, is that correct?

Mr. ALLISON. Yes, that is correct.

Chairman MILLER. Okay. The memo appears to be silent. We didn't hold it up to a light to see if there was something hidden in it, but it doesn't appear to have given any kind of guidance about what should be in that agreement, is that correct?

Mr. ALLISON. No, it laid out funding levels for fiscal 2006 and talked in terms of $3 million for the Environmental Management Program from within available funds, and another million from the Science Program, and then asked me to go and negotiate a new cooperative agreement.

Chairman MILLER. Dr. Bertsch earlier testified that he provided you a business plan with the task funding and these are all the tasks that you agreed the site needed, is that right?

Mr. ALLISON. Yes, that is part of the negotiations for the cooperative agreement that formed kind of the starting point for our work.

Chairman MILLER. Okay. And the broad categories, environmental characterization, ecological risk and effects, remediation restoration. Do you still think environmental characterization is a task needed by SRS?

Mr. ALLISON. If you review the cooperative agreement that we signed, I believe that is one of the tasks that——

Chairman MILLER. In December of 2006?

Mr. ALLISON. Yes, in December of 2006. I believe that——

Chairman MILLER. Essentially all of these tasks—well, first of all, did Dr. Bertsch testify truthfully when he said that you and he agreed that these were tasks that SREL performed that the site needed? Is that correct?

Mr. ALLISON. Well, as I stated, I believe that those are in the cooperative agreement which we both signed out to, so yes, that is some admission that we do need that kind of work accomplished.

Chairman MILLER. Okay. Now, we have just heard testimony that these tasks were to be put to peer review for scientific merit. Are you aware of any peer review of the proposed tasks, pursuant to this business plan, the cooperative agreement, in December of 2006?

Mr. ALLISON. I believe Mr. Gilbertson stated that that was the plan but that it was not performed.

Chairman MILLER. There was no peer review?

Mr. ALLISON. No, there wasn't.

Chairman MILLER. Okay. And are you familiar with what is involved in peer review?

Mr. ALLISON. Yes, I am generally aware of the level of detail and the types of independence that is involved in a peer review.

Chairman MILLER. Okay. And with respect to the various tasks, the 35 that became 27, there has been some discussion that those should be awarded competitively. Are you aware of any competition for those 27 tasks or any of the tasks that SREL has performed?

Mr. ALLISON. No, I am not aware.

Chairman MILLER. There is no request for proposals?

Mr. ALLISON. No, there is not, no.

Chairman MILLER. Dr. Bertsch testified that the site's personnel were involved in developing the various tasks, is that correct?

Mr. ALLISON. I think Ms. Collazo has stated that there were 35 tasks initially provided. Those are pared down to 27. When he says the site, I believe he means his staff. My staff was involved in the review process in looking at those tasks and that was the DOE role in that.

Chairman MILLER. I am sorry, say that again.

Mr. ALLISON. My staff, as I mentioned, my federal project directors, were involved in reviewing the tasks that were proposed by the Savannah River Ecology Laboratory.

Chairman MILLER. Well, is it correct that they were developed in concert with your staff, in consultation with your staff?

Mr. ALLISON. There was some back and forth discussion to look at those tasks, yes.

Chairman MILLER. The final winnowing from 35 to 27 to six, were you involved in that decision to approve six tasks of the 27, what had earlier been 35?

Mr. ALLISON. No, Yvette Collazo had taken the lead on that activity for me when she inherited this work activity and I asked her to take the lead.

Chairman MILLER. Well, you had earlier been involved in discussions about what you needed. You had gotten the plan, the business plan, from Dr. Bertsch. You had been involved or at least consulted with respect to the cooperative agreement in 2006. What role did you play in deciding that only six of those tasks were really that important that they needed to be funded?

Mr. ALLISON. I was informed of that once Yvette and the federal project directors had done a review, but I was not personally involved in that review effort.

Chairman MILLER. Were you given an opportunity to say no, these other things are really important, we have got to do these?

Mr. ALLISON. Yvette provided me with the lists, so yes, I did. But I understood the process she had undergone to review those and I concurred in that process, what was sent to headquarters.

Chairman MILLER. I am sorry, what?

Mr. ALLISON. I did have a chance to review the tasks that she proposed and I concurred with that before she sent that to headquarters for review.

Chairman MILLER. My time has expired. Mr. Sensenbrenner.

REJECTION OF TASKS SUBMITTED TO THE DOE

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman. I think the fog is starting to clear over all of this and I would like to thank all of you for your testimony, because you have been huffing and puffing and blowing away the fog. What appears incontrovertible is that Dr. Bertsch knew that DOE funding was being phased down and out and there would be no continued guaranteed funding past fiscal year 2007. He said, so that comports with everything else that we have heard both at this hearing and the July 17 hearing. We now get to the issue of the additional funding that could be obtained by SREL doing tasks that they submitted to DOE for its consideration. They had 35 and it went down to 27. Six were approved. There was some money that came into that. Twenty-one of them obviously were not.

Now the question that I have and I think Mr. Anderson and Mr. Gilbertson probably can answer this best, were the denied tasks rejected because they weren't relevant to Environmental Management's mission?

Mr. GILBERTSON. The determination on relevancy to Environmental Management's program was made by the office at Savannah River and that was exactly why they weren't funding. It wasn't that they weren't good science; it wasn't that they wouldn't support other Department of Energy programs, potentially, like GNEP with the Office of Nuclear Energy, or they wouldn't support the Office of Science's fundamental program, potentially, if it was competitively submitted; it was that it didn't support our EM programs.

Mr. SENSENBRENNER. So if it was outside the scope of the Environmental Management programs, whether it was submitted, there was no need to submit it a to a peer review committee and there were no competitive bids because everybody else realized that you weren't the source of the funding for what they were proposing to do. Am I correct in that?

Mr. GILBERTSON. You are correct in that.

Mr. SENSENBRENNER. So what is the beef? I yield back the balance of my time.

Chairman MILLER. Mr. Hall.

MR. ALLISON'S BACKGROUND WITH SREL AND THE DOE AGREEMENTS

Mr. HALL. Thank you, Mr. Chairman. Mr. Allison, by the way the Chairman introduced you, it indicated some lack of regard for you on our part of up here. I haven't heard anything about that and wouldn't agree with it. I recognize you as a good member of the Department and a very valuable—and that you have position enough to invite you to come testify before us. I ought to let you know that we appreciate and we thank you for it.

Mr. ALLISON. Well, thank you. And I didn't take that statement as a slight against me or my abilities.

Mr. HALL. Good. How long have you worked with SREL?

Mr. ALLISON. I have been involved most closely with SREL the last five years in my current position.

Mr. HALL. What has been your experience with the lab?

Mr. ALLISON. They do generally good work.

Mr. HALL. What needs does the lab fulfill for the site?

Mr. ALLISON. Well, right now, I think the primary need that they fulfill is in our soil and groundwater program, helping us with some of the work we are doing to try to deal with past environmental spills that have gotten into soil and groundwater.

Mr. HALL. If SREL closes, what difficulties, if any, would this pose for the site?

Mr. ALLISON. Well, certainly the work that they are currently doing that supports our soil and groundwater program, we would have to find another source for getting that work accomplished. It is critical to our mission.

Mr. HALL. I thank you for that. And let me get to the crux of what we are here about. When did you first become aware of the conditions of the agreement negotiated between Georgia and South Carolina Congressional delegations and DOE?

Mr. ALLISON. It was October of 2006.

Mr. HALL. And would you ever make a commitment that you knew were contrary to established DOE agreements? You wouldn't, would you?

Mr. ALLISON. No, absolutely not.

Mr. HALL. And what did you do when you first became aware the negotiated agreement?

Mr. ALLISON. One of the first things I did after coming to Washington and meeting with the senior management here was go talk to Dr. Bertsch and convey to him the terms and conditions of that agreement.

Mr. HALL. All right.

Mr. ALLISON. It was clear that that was how we were going to be moving forward.

Mr. HALL. So you think Dr. Bertsch, and maybe others at SREL or UGA, knew about the existing agreement when you did?

Mr. ALLISON. When I did or before I did?

Mr. HALL. Either one or both.

Mr. ALLISON. Well, you know, as some of the testimony has borne out today, including Mr. Anderson's testimony, there were some indications, and even in Dr. Bertsch's testimony, that he knew that there was a need for a new mechanism to come into place.

Mr. HALL. Can you imagine that the doctor knew when the cutbacks were made, Dr. Bertsch also knew the agreement, he knew of the refinancing, but he said he didn't know the details? Is he Director of the lab? Wasn't that his title?

Mr. ALLISON. Yes.

Mr. HALL. He's been Director of the lab when you have been—daily and working with people and giving instructions and seeking reports and things like that? That would be normal, wouldn't it?

Mr. ALLISON. Yes, I believe that if he didn't know the details, he probably should have tried to find them out.

Mr. HALL. Yes, instead he just kept on directing but he didn't know. He was promised only two years. What is more important than the duration of an agreement like that, that might be the very livelihood for all the employees and the existence of the operation itself? It is the length of it, isn't it?

Mr. ALLISON. Certainly, I think Dr. Bertsch, in my interaction with him, should have felt comfortable enough to have asked me about what this agreement meant and then I certainly would have gone and tried to find out.

Mr. HALL. Or anybody else in five miles of him, anybody. He could have asked anyone, couldn't he?

Mr. ALLISON. Yes, I believe so.

Mr. HALL. Now, he has tried to distance himself from his own quote that certainly cried out that there was an agreement, that he knew there was agreement. Have you been here all day? Have you heard all the testimony?

Mr. ALLISON. Yes, sir, I have.

Mr. HALL. Do you think that everyone at DOE involved with SREL funding but him, maybe, and another two were aware of that agreement? They were aware there was an agreement and that it was a two-year agreement, were they not, as far as you know, in your discussions with them, your day-to-day activities?

Mr. ALLISON. Well, in my day-to-day activities with him, he never gave me that opinion that he knew anything beyond the fiscal year 2006 agreement for funding. Now the agreement for a million dollars in fiscal year 2007, I was never made aware of that through Dr. Bertsch, that he knew that.

Mr. HALL. Well, it is pretty logical, as a Director of that lab, that he either knew it or should have known it.

Mr. ALLISON. Well, some of the testimony that has been coming out today raises in my mind that he might have known more than he indicated to me.

MR. ANDERSON'S INVOLVEMENT WITH THE SREL FUNDING ISSUE

Mr. HALL. I will go to Mr. Anderson and ask you how and when did you become involved with the SREL funding issue?

Mr. ANDERSON. In the Spring of 2005, Jill Sigal, the Assistant Secretary for Congressional Affairs, came and asked me about it— first of all she said that the SREL's funding had been zeroed out and then asked if they did good work. Was this worthy of pursuing, of trying to repair this or trying to fix this——

Mr. HALL. What was your answer?

Mr. ANDERSON. I said yes, it was. They did do good work.

Mr. HALL. And what was her actions after that?

Mr. ANDERSON. At that point in time, she put together kind of a structure of an agreement, which we went and talked to the Secretary, since the Secretary had already issued a letter to the delegations, about the zeroing out from the Office of Science. We did not want to get into too much detail without making sure we had his agreement to approach, in general, this concept of working out an agreement. And that is primarily what the memo that has been referred to earlier, to the Secretary was for, was to get his agreement for us to pursue this negotiation.

Mr. HALL. And you had a conversation with Dr. Bertsch as to the facts and the substance of the agreement?

Mr. ANDERSON. I did later in May when a lot of it was decided and mostly it was the University of Georgia, out of Athens, management that was——

Mr. HALL. In May of what year?

Mr. ANDERSON. 2005. I am sorry.

Mr. HALL. Do you disagree with Dr. Bertsch when he says that he didn't know of it and that he hadn't been told of it?

Mr. ANDERSON. I remember having a conversation with him by telephone. I was in D.C. at the time and he was back in South Carolina and Georgia area.

Mr. HALL. You told him, didn't you?

Mr. ANDERSON. I talked to him about it and I told him that and one of the reasons I really remember it was, is there was a discussion about how difficult it was going to be and I recognized it would be a difficult task, a difficult challenge to move ahead and that is why there was a couple of years in trying to do that transition.

Mr. HALL. I think my time is probably up and I will try to get back with you on that and enlarge on it a little when I have a third or fourth or maybe a fifth opportunity to.

DR. BERTSCH AND THE AGREEMENT

Chairman MILLER. Thank you. The Chair recognizes himself, now, for five minutes for a third round of questioning. Mr. Allison, I am completely perplexed by the last set of questions, that Dr.

Bertsch could not possibly have failed to understand, as the head of SREL, the agreement that SREL would have to be self-sufficient in two years. You didn't know that, right? Hasn't that been the testimony today? Hasn't that been what Mr. Sell just said an hour or two ago, that you swore and declared to him that you didn't know anything about that and that is why you came to him with the lump-sum contract for all of these tasks, of $20 million over five years, it is because nobody told you?

Mr. ALLISON. That is correct.

Chairman MILLER. So Mr. Bertsch, supposedly the head of SREL, can't possibly have not had failed to know that that agreement was in effect, but you were head of the facility. You were head of the $1.2 billion operation and you didn't know, is that right?

Mr. ALLISON. That is correct, but Mr. Bertsch, or Dr. Bertsch, excuse me, was involved in some meetings and discussions at DOE Headquarters that I was not involved in. Specifically, he was involved in a meeting that he mentioned, with Jill Sigal in May of 2005. And as Mr. Anderson has stated, and I have no reason to doubt Mr. Anderson, he did talk to him about the agreement. And so I believe that there were some things that were said to Dr. Bertsch that gave him some knowledge that I didn't have.

Chairman MILLER. Okay. But that is because you have decided that you will credit what Mr. Anderson says, where his testimony conflicts with Dr. Bertsch's. But their testimony is in direct conflict and you choose to believe Mr. Anderson and not Dr. Bertsch, is that correct?

Mr. ALLISON. Well, there is the other data point that I look at is the article in the University of Georgia——

Chairman MILLER. Yes, the newsletter.

Mr. ALLISON. Yes.

Chairman MILLER. Okay. But you were head of the SRS, the Savannah River Site. Nobody told you. And was there anything in Dr. Bertsch's conduct with you that suggested that he was playing you? Since you didn't know what he knew that he was playing you?

Mr. ALLISON. The only thing that I will mention is that, shortly after I found out about the agreement, I called Dr. Bertsch and I said to him, just pretty bluntly, "Paul, what do you know about an agreement for $1 million in fiscal year 2007?" And Dr. Bertsch's comment to me was, "Well, I thought that was just from headquarters and I could negotiate a separate agreement with you." So from my standpoint, it is one pot of money. In fact, fiscal year 2006 funding didn't come from headquarters, it came out of the site's budget and we had to allocate that out of existing funds.

Chairman MILLER. Dr. Allison, in our previous hearing on this, and I understand that you weren't here, but at the previous hearing we had a set of scientists who appeared to be the real deal and they talked about the value of SREL and one of the things that they described that SREL had done was to detect mutations in amphibians, which they thought was important, an important measure of the effect of radiation. Is that something that strikes you as important?

Mr. ALLISON. Well, I believe that the work that the Savannah River Ecology Laboratory does is important. In fact, that is why we at the Department executed a new cooperative agreement with them. There is some value in the work that they do.

Chairman MILLER. It is nice to use a phrase that was used in the interviews with our staff.

Mr. ALLISON. And also it supports the mission priorities of the site and our cleanup mission.

MISSION CRITICAL WORK

Chairman MILLER. I mean, how important is that?

Mr. ALLISON. Well, for this year we identified $800,000 in tasks that directly supported mission critical work.

Chairman MILLER. I am trying to get mission critical. Is that a budgeting term, a management term that you have heard before that has a clearly defined, clearly understood meaning?

Mr. ALLISON. Yes, those are things that support the site priorities for cleanup.

Chairman MILLER. Can you refer me to any authority, a textbook, something that tells me where the term mission critical comes from?

Mr. ALLISON. I don't know that I can refer you to a textbook.

Chairman MILLER. Okay. Well, again, in my questions to Ms. Patterson I gave the example of, you know, tadpoles with two heads. I was only half joking. Really, only half joking. One of the tasks that were identified was define more clearly the risk from low dose rate chronic exposures to radiation and the specific task is conduct studies using site amphibian species, tadpoles, as mono-organisms that determine radio sensitivity during egg development, larval development, metaphorphic period tadpoles will continue as part of an effort to establish data for potential radiation protection guidelines for natural populations. Can you describe for me how the decision was made that that is nice to have but not mission critical?

Mr. ALLISON. I would say that, certainly from an overall standpoint, that sounds like a good thing. But from the standpoint of the Environmental Management Program and the cleanup mission, that wasn't something that we believed was supportive of our cleanup goals and cleanup mission.

Chairman MILLER. Ms. Collazo, could you tell us why that is something that is nice to have but not critical?

Ms. COLLAZO. Well, the decision about what was mission critical or not, or ties directly to our projects, or fit the priorities at hand with the projects that are critical, was made by the federal project directors based on the definition that we just discussed, in terms of mission critical. So it was determined by the federal project directors that there were other things on the list that actually met that and perhaps if that one wasn't one of the ones that was identified, then it wasn't determined to be so.

Chairman MILLER. Okay. Well, you were involved in those decisions, weren't you?

Ms. COLLAZO. I was involved in the final decision, yes, of the ones that were proposed for my area, yes.

Chairman MILLER. Mr. Gilbertson, you were involved in those decisions, right?

Mr. GILBERTSON. Yes. You have a good example and I think that is important for the country. The Department of Energy and the Office of Science has a low dose research program and they fund work tied to that area. They have a scientific plan, a research plan, an agenda that they have laid out and they competitively, on an annual basis, solicit proposals from universities and outside entities to support that kind of work. And that was the kind of things that we were encouraging the ecology lab to contribute their proposals to.

Chairman MILLER. I am sorry. This task that had previously been done SREL, this was continuing research that had begun in previous years, a longitudinal study. You are now testifying that that is something that is available for competitive funding from other sources.

Mr. GILBERTSON. The science work that they do on low dose activities, they can competitively submit proposals for support of that work.

Chairman MILLER. Who?

Mr. GILBERTSON. The Office of Science.

Chairman MILLER. Okay. Is there a current request for proposals for that topic?

Mr. GILBERTSON. On an annual basis they put out a request for proposals in the low dose arena.

Chairman MILLER. Do you know who is doing this work now?

Mr. GILBERTSON. No.

Chairman MILLER. Are you sure anyone is doing this work now?

Mr. GILBERTSON. I am not sure.

AMPHIBIAN MUTATIONS

Chairman MILLER. Okay. And a long-term study of mutations of amphibians, the disruption of that, the discontinuation of that is not critical at a site that has a high level of radioactive materials?

Mr. GILBERTSON. For the EM Program, we looked at it and it was not determined to be critical.

Chairman MILLER. Okay. And with whom did you consult in making that decision?

Mr. GILBERTSON. The project directors on site made that decision.

Chairman MILLER. Okay. Was Mr. Allison involved?

Mr. GILBERTSON. There are federal project directors that are responsible to implement the work in our projects.

Chairman MILLER. And who was it who said don't worry about the tadpoles? We don't really need to follow how the tadpoles are doing.

Mr. GILBERTSON. Collectively, the group of federal project directors reviewed each one of the tasks that were there and if they decided, for example, that the people that were responsible for nuclear materials decided that it was not critical to their program, to their projects, they made that decision.

Chairman MILLER. Okay. And again, to get back to it again and again, but are there documents that reflect how that decision was made, who was involved or what the reasoning was?

Mr. GILBERTSON. We have provided the Committee with a matrix that documents the results of the federal project directors' reviews.

Chairman MILLER. That is this, isn't it?

Mr. GILBERTSON. Yes, it is.

Chairman MILLER. So any explanation appears here?

Mr. GILBERTSON. Correct.

Chairman MILLER. Okay. And I think I read the entire explanation of the project and it says DOE critical need, none. Is that the analysis, none?

Mr. GILBERTSON. That is the summary of the analysis.

Chairman MILLER. Well, it seems to be not just a summary, it appears to be the entire analysis. Is there somewhere else that a more elaborate analysis appears?

Mr. GILBERTSON. I am not aware of any place that there is a more elaborate written analysis, no.

Chairman MILLER. Okay. This was a couple of guys in an office talking?

Mr. GILBERTSON. It is the federal project directors that are responsible for the activities of that work, correct.

Chairman MILLER. Okay. At a site where there had earlier been detected mutations of amphibians as a result of radiation, as a result of environmental exposures, you determined that there need not be a continued study, the long-term study need not be continued, of how low level radiation was affecting amphibians, and there is no writing to reflect how that decision was made, except none?

Mr. GILBERTSON. This is the documentation that we have for whether or not the work that is being performed supports the project activities that were funded for by Congress.

Chairman MILLER. I am now spectacularly over my time. Mr. Hall.

MORE ON MR. ANDERSON'S BACKGROUND

Mr. HALL. Thank you, sir. First let me ask for a little fairness from the Chair on his questions of Mr. Allison, as to when he knew. Actually, Mr. Allison, this agreement was made, I think, in 2005 the agreement was made and it was made by the congressional delegation and by the Department of Energy up here in Washington and you were hundreds of miles away from there, down in the Savannah River Site, were you not?

Mr. ALLISON. That is correct.

Mr. HALL. That is where you were?

Mr. ALLISON. Yes.

Mr. HALL. And you hear certain things and you know certain things, but a little bitty independent called SREL, and not even run by DOE, is in the circle of your responsibility down there, among several others, right?

Mr. ALLISON. That is correct.

Mr. HALL. And with the many facilities in there. And Dr. Bertsch certainly didn't tell you, did he?

Mr. ALLISON. No, he didn't.

Mr. HALL. But we have evidence here that he knew it and that he told other people. We know that and we are going to enlarge that a little more with Mr. Anderson in a minute. Anyway, I just wanted to know the difference in where you were and where they were and that you are not a part of that and you are not a part of the day-to-day operation like Dr. Bertsch was and it is just hard to even guess, with my wildest dream, that he could have been running that operation, running director of the lab and didn't know the duration. He thought it was two years, if everything is business, going just like it was. He said it was going bad and said it was going down and said it without the influx of $4 million and a million the next year, that it would be closed now. Those were day-to-day activities. You weren't involved in that. You had a right not to know it and I admire you for coming here to testify.

NATURE OF THE AGREEMENT

Now let me ask Mr. Anderson something. What was the nature of the agreement between DOE Headquarters, UGA and the congressional delegations back in May or June of 2005? And do you believe that everyone at DOE involved with SREL funding was aware of the agreement? Talk to me a little on that.

Mr. ANDERSON. The nature of it was to provide funding for a transition period so they could change to a different business model for the Savannah River Ecology Laboratory, with the Environmental Management Program providing, in 2006, $3 million of funding. The numbers are written down. But in essence, right at $4.5 million of funding total between the Office of Science, the NNSA, and the Environmental Management Program. My belief as far as the people that were actually in the discussions knew the agreement. It was not communicated as well as it should have been on my part. I mean, it is clearly, you know, one of those things in hindsight. I should have had more discussion with Mr. Allison there, you know, related to very specific details about that. But the ones that were involved, you know, directly in that did understand what the agreement was.

Mr. HALL. And Dr. Bertsch was certainly involved directly in it, was he not?

Mr. ANDERSON. He was involved early. Due to another personal reason, I was not at the meeting on May 11, where I know that there was a lot of discussion around what the problem was and as far as also trying to develop potential solutions to it.

MORE ON MS. SIGAL

Mr. HALL. And did you and Jill Sigal come to the aid of SREL and kind of take it under your arms that something that you wanted to breathe life back in and give them a second chance?

Mr. ANDERSON. We did.

Mr. HALL. And were you successful?

Mr. ANDERSON. As I am sitting here today, that might still be judged, you know, at a later time. I would like to see SREL within that different business model, where we do have work that is part of the Environmental Management Program that needs to be done and as can be told by Mr. Allison there and the award of a certain money then for doing those tasks that are related to the environmental management projects, which are, I will note, you know, run and controlled by sets of regulations and requirements and State oversight and regulatory agencies and federal regulatory agencies. And so that work needs to be supportive within the requirements for us to execute our environmental management cleanup mission.

SREL BECOMING SELF-FUNDED

Mr. HALL. And during the negotiations over the agreement, were you told that SREL could ultimately become self-funding?

Mr. ANDERSON. I don't recall that those were the exact words, but that was the impression and it was a part of the agreement with the University of Georgia.

Mr. HALL. And did you have any idea about what date they were saying or thinking they could become self-funding?

Mr. ANDERSON. The agreement had it over a two-year time period.

Mr. HALL. Do you believe SREL has actively looked for additional resources outside DOE that would enable the lab to be self-sustaining?

Mr. ANDERSON. I do not believe they have aggressively pursued those outside resources.

Mr. HALL. Made one run at it and struck out, didn't they? Wasn't that their testimony earlier?

Mr. ANDERSON. I don't recall if they just made one run.

Mr. HALL. Then did Jeff Allison have the authority to commit additional funds outside of the agreement between DOE, UGA, and the Congressional delegations?

Mr. ANDERSON. Mr. Allison does have authority to make certain obligations of money within limitations, but he also has a responsibility and a charge to execute a program that meets his requirements, and in tight budget constraints, if he puts a dollar toward an SREL function like this that is not directly related to the cleanup, it will take money away from delivering on his other cleanup commitments.

Mr. HALL. My last question is, were you ever aware of any efforts on the part of Jill Sigal, or anyone else in DOE's Office of Congressional Intergovernmental Affairs, to cut funding from SREL?

Mr. ANDERSON. No, sir.

Mr. HALL. I think that is all I have.

Chairman MILLER. Mr. Lampson for five minutes.

GENERAL BACKGROUND FROM MR. GILBERTSON

Chairman LAMPSON. Thank you, Chairman Miller. Mr. Gilbertson, you indicated to Committee staff that headquarters had come to not fully trust the site people regarding SREL. There was a feeling that the site staff were too close to the lab and would make sure that it was funded at the $4 million regardless of need, is that right?

Mr. GILBERTSON. I have the responsibility for an oversight function. I do not believe I said that I did not trust the staff.

Chairman LAMPSON. Did it ever strike you that perhaps they wanted to fund the lab at $4 million because they had that much work for the lab and because the lab was valuable to the site and they knew that without sufficient funding, the lab would go away?

Mr. GILBERTSON. The site project directors were the ones that decided what projects need to be funded. So the issue, there was no set levels ever for funding for them.

Chairman LAMPSON. Was it decided that your guidance would be the standard?

Mr. GILBERTSON. My guidance to them was that it needed to support the project needs and I think that is constant for all of our EM work.

Chairman LAMPSON. You are charged by Mr. Anderson with overseeing the implementation of the cooperative agreement by the site staff, is that right?

Mr. GILBERTSON. Overseeing, yes.

Chairman LAMPSON. Did he tell you to run a peer review?

Mr. GILBERTSON. The process for overseeing it is something that I establish myself. He didn't direct me as to how to do it.

Chairman LAMPSON. And he didn't tell you what standard?

Mr. GILBERTSON. Right. He didn't tell me what standard to use.

Chairman LAMPSON. Did you ever discuss with him the approach you were going to take of directing site staff to apply the standard in only those things that were deemed mission critical needs in fiscal year 2007 deserved funding?

Mr. GILBERTSON. No, I didn't discuss that with him.

Chairman LAMPSON. You developed mission critical needs in fiscal year 2007 all on your own. When did you develop that idea?

Mr. GILBERTSON. In concert in discussions with site people. I don't know that we used the words "mission critical" specifically. It came to be known as that. But the issue is, is it needed to be tied to projects and deliverables for the site. So that was the crux of it.

Chairman LAMPSON. And you directed the site staff on what that meant, on your own, without guidance from any superior?

Mr. GILBERTSON. Correct.

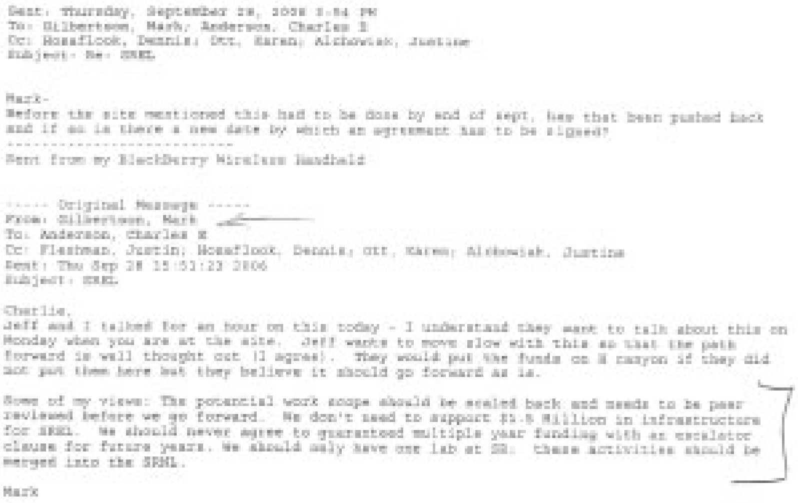
Chairman LAMPSON. You had expressed the opinion, as early as September 2006, that there should not be two labs on the site, that there should be only one and that is the Savannah River National Lab, is that true?

Mr. GILBERTSON. I am not aware of any comments to that, in that direction.

Chairman LAMPSON. We have an e-mail that indicates that and I will enter it into the record and I would ask——

Chairman MILLER. Without objection it will be entered into the record.

[The information follows:]



Sent: Thursday, September 28, 2006 3:54 PM
To: Gilbertson, Mark; Anderson, Charles E
Cc: Hossflook, Dennis; Ott, Karen; Alchowiak, Justine
Subject: Re: SREL

Mark-
Before the site mentioned this had to be done by end of sept, has that been pushed back and if so is there a new date by which an agreement has to be signed?

Sent from my BlackBerry Wireless Handheld

----- Original Message -----
From: Gilbertson, Mark
To: Anderson, Charles E
Cc: Fleshman, Justin; Hossflook, Dennis; Ott, Karen; Alchowiak, Justine
Sent: Thu Sep 28 15:53:23 2006
Subject: SREL

Charlie,
Jeff and I talked for an hour on this today - I understand they want to talk about this on Monday when you are at the site. Jeff wants to move slow with this so that the path forward is well thought out (I agree). They would put the funds on H canyon if they did not put them here but they believe it should go forward as is.

Some of my views: The potential work scope should be scaled back and needs to be peer reviewed before we go forward. We don't need to support $1.5 Million in infrastructure for SREL. We should never agree to guaranteed multiple year funding with an escalator clause for future years. We should only have one lab at SR: these activities should be merged into the SRNL.

Mark

Chairman LAMPSON. You also expressed the belief that SREL should not get more than $1.5 million in support last September.

Mr. GILBERTSON. That particular e-mail, if you read the details of it, was an exercise asking what if. It was not directing that they only get $1.5 million.

Chairman LAMPSON. You are aware of Mr. Sell's guidance that the suite of needs that Mr. Allison had described to Mr. Sell was okay for EM to fund, weren't you?

Mr. GILBERTSON. The suite of activities that we put in the cooperative agreement were ones that were the areas that the SREL were world-class experts in and it was put in there to give them a vehicle so others could use their services to support their research.

MORE ON MR. ANDERSON

Chairman LAMPSON. And Mr. Anderson, can you explain why you neglected to tell Jeff Allison of the Secretary's guidance on SREL when you tasked him with negotiating a new cooperative agreement?

Mr. ANDERSON. It is an oversight on my part.

Chairman LAMPSON. That is something so important it would seem that it should have been in writing, as being done. Can you explain why you didn't give Mr. Gilbertson guidance on how you expected him to carry out oversight of the SREL cooperative agreement?

Mr. ANDERSON. Your previous question was related to the direction to Mr. Allison and this is—did you intend for that to shift the direction to Mr. Gilbertson?

Chairman LAMPSON. What direct guidance did you give Mr. Gilbertson in overseeing?

Mr. ANDERSON. The guidance I gave to Mr. Gilbertson would be to make sure it was part of the Environmental Management Program, that it met our needs and that we could defend that it did support the objectives we had in our projects. I did not give him specific direction in that. He is in a position and has the authority, the experience and has been recognized in the past for knowledge on science as it relates to achieving results.

Chairman LAMPSON. You knew that Mr. Gilbertson believed that SREL should go away and that there should only be one lab at the site, SRNL, and you received an e-mail from him on this matter in September. Why would you put someone in this role without direction, knowing that he wanted to see SREL go away, unless you were happy with him pursuing that goal?

Mr. ANDERSON. I assume that you are referring to the e-mail that was just handed to me?

Chairman LAMPSON. Yes.

Mr. ANDERSON. If I may have just a moment.

Chairman LAMPSON. Sure.

Mr. ANDERSON. I am sorry. Would you rephrase the question?

Chairman LAMPSON. Why would you put someone in this role without direction, knowing that he wanted to see SREL go away, unless you were happy with him pursuing that goal?

Mr. ANDERSON. At this point, I mean, this was in the September 2006 timeframe, I didn't key in on the issue about one lab there. I do know that we have had a lot of discussions about how we support the infrastructure and whether there is duplication of efforts by having a separate lab, from an infrastructure standpoint, not the work, not the people who are doing the work, but from infrastructure itself. That wouldn't preclude the University of Georgia, the University of South Carolina, the University of Wisconsin, or any other entity that has expertise in this area, from doing work, you know, under a more singular laboratory infrastructure. But I neither gave any direction to that or stated that we wouldn't go there at this point. The Savannah River Ecology Lab is a lab that is operated by the University of Georgia.

FUTURE PROJECTS IN THE COMMUNITY

Chairman LAMPSON. Do any of you believe that more money will be spent in the future—these activities than was being spent in the past?

Mr. ANDERSON. Could be or would be would probably be-

Chairman LAMPSON. What is likely?

Mr. ANDERSON. At this point I am not real sure. The laboratory still has not indicated a difference in the approach to the research that they would like to do for Savannah River. Other than what we have seen here and the amount of money that has been given for the task so far, it doesn't appear that there is a development of new research that lines up then with the environmental management jobs or environmental management projects that have to be done. If that stays the same, then I do not see that it would increase.

Chairman LAMPSON. Does anybody else want to make a comment? Is that good or bad for the community? Anyone.

Mr. ANDERSON. I think a lot of that would depend on what is in its place as far as supporting these projects at the Savannah River Site.

Chairman LAMPSON. When will we know what will be in its place?

Mr. ANDERSON. Again, I would go back and say that at the Savannah River Ecology Lab right now, we have met our commitments. We have tasked certain work to be done by the Savannah River Ecology Lab. They had said they were going to close. They have not. We still expect to have those tasks delivered. If they end up closing, we have got to look at the options for getting those tasks done to support Mr. Allison's projects.

Mr. GILBERTSON. Dr. Lee, in an e-mail yesterday that he sent me, has indicated that he expects to have a transition plan on where they are going. They intend to go from the University of Georgia's perspective by the end of August, but we don't know where they are going.

Chairman LAMPSON. Thank you for your indulgence, Mr. Chairman.

DECISION TO ELIMINATE SREL'S BUDGET

Chairman MILLER. Thank you. I don't have many more questions, but I do have a just a couple. Mr. Allison, I want to make it clear. When I have characterized some of the ways that you have been described in testimony by the Department of Energy personnel, I had been offended for you. I had thought that the decisions that you have made, your decisions about what was important for the Savannah River Site, the work that SREL did, has done in the past, the environmental work determining risk, environmental risk, determining the best way to deal with remediation and restoration, and in the last hearing on this topic we heard from prominent scientists that the work done at that lab has saved many millions of dollars by choosing the best and cheapest remediation and restoration. I think the decision to keep the lab in place and continue to do this work was a prudent decision and I have been offended for you, if you can't express yourself, for the way that you have been characterized by some of the Department of Energy's testimony, for the decisions that you have made and the way that you have proceeded.

There have been several references to a decision two years ago in the President's budget to eliminate all funding, zero out, to use the jargon, all funding for the Savannah River Environmental Lab, SREL. And that has been treated as a decision that was a correct decision and that this has all been a reprieve. The Savannah River Ecology Lab has been living on borrowed time since then and should have known it and should be happy for the two-year reprieve that it has gotten. There has been remarkably little discussion of how that decision was made in the first place. It was apparently made by OMB. It is not clear who was involved in that decision or why it was made. Mr. Allison, do you have any idea why the decision made in 2005 not to include any funding for SREL in the President's budget, how that was made and by whom it was made?

Mr. ALLISON. Well, no, I don't. I learned about that decision when the President's budget came out the first Monday in February.

Chairman MILLER. And you were consulted in no way?

Mr. ALLISON. No, I wasn't.

Chairman MILLER. Do you agree with that decision?

Mr. ALLISON. Well——

Chairman MILLER. Let me spare you that.

Mr. ALLISON. What I would suggest, I know at the beginning of this session you talked about having Dr. Orbach testify. I think he would be in the best position to answer that question.

Chairman MILLER. Okay. Mr. Anderson, do you know why that decision was made?

Mr. ANDERSON. Other than a balance on the priorities within the Department, no, I do not. I also learned of that decision when the budget was actually rolled out in February.

Chairman MILLER. Okay. Mr. Anderson, we heard testimony a couple weeks ago that the work at SREL, and remediation and restoration, in deciding that rather than being cleaned up and removed from the site, oh, something on site, that SREL's research showed that it could be left in place and would—oh, I am searching for the scientific words—would be, over time, absorbed.

Mr. ANDERSON. Attenuation.

Chairman MILLER. Okay. And with that decision, that research led to saving, as I recall, close to or perhaps more than a billion dollars, is that correct?

Mr. ANDERSON. I have not looked at the cost estimate on that. It sounds reasonable that they did some work that did support a project or a project decision earlier. And again, I repeat, we have worked it. We have identified work, so far, that needs to be done for projects in the future. We are also open if somebody has work that they want to propose for our ongoing projects, it would make them better to tie them to those projects and there is no limit, you know, as far as that is concerned, other than the fact that it has to be related to the projects, the charge that we have to clean up a legacy from the Cold War.

Chairman MILLER. How often does a lab have to save the Federal Government a billion dollars to justify a $4 million a year budget appropriation? It seems like doing it once would get you a long time, a lot of years of funding.

Mr. ANDERSON. From the charge we have for the stewardship of our money, you know, the funding there is for the work that has to be done, not work that has been done in the past.

Chairman MILLER. Mr. Hall.

Mr. HALL. I will be very brief. The questions he has asked you about zeroing out, you all are all loyal members of the Department of Energy, employees over there. That is kind of above your pay grade, isn't it? When they zero out one like that, isn't that above you? Maybe Mr. Sell and maybe the Secretary himself makes that decision. Isn't that the first time you knew about it, after the Secretary had made it?

Mr. ANDERSON. Well, the decision was actually made in a different program and I mean, that is where, you know, we would fall out, where we would not a part of that decision.

Mr. HALL. And when you found out about it, you and Jill Sigal tried to do something about it. Let me just go over it. I am closing now. We have this entity that has operated successfully for a number of years and after studying them, they were zeroed out and they started with zero. And then you two intervened. You put something in there. You put $4 million in there for the first year, a million-plus in there for the second year, and they were happy with it. DOE, the SREL, the UGA and the Georgia and South Carolina delegations agreed to them and they said it was their hope that additional time would give the lab the opportunity to seek enough outside funding, which they didn't do, and that is where we are right now. And isn't that the long and the short of what we have done here?

And after hearing all of the testimony that you have heard here today, is there any question in your mind about what Dr. Bertsch did know about this and did know when it was done, and did know or should have known the effect of it? And anybody that is a director of a lab, overseeing all of that, has that responsibility, has had it for many, many years, knew or ought to know the duration of an agreement. What is more important than how long is it for, than for somebody to know that it was for two years? I can't believe that he could come here and sit down and testify that he didn't know that. If he didn't know it, it is because he hadn't read his own agreement. He was part of making that agreement hundreds of miles up above away from SREL was and he is bound with it and he has got to live with it. I yield back my time.

Chairman MILLER. I think that is enough rounds of questioning. Well, we will now stand in recess.

Chairman LAMPSON. Mr. Chairman, before you do, can I just ask one what I think is hopefully a simple question?

Chairman MILLER. To whom do you wish to ask the question? To whom do you wish to ask?

Chairman LAMPSON. The whole panel.

Chairman MILLER. All right. Well, in that case I will waive my next round questioning. I will yield to Mr. Lampson my time.

RAISING MONEY FOR SREL

Chairman LAMPSON. I am going to yield a lot of it back. I was just curious to know what your thoughts are on the panel. You said that everything needs to be tasked and you are also sending the lab our to raise the money necessary to be able to go on its own. Yet, most of the employees are gone, at a point. Do they have the ability to seek the funding necessary to continue to do their job?

Mr. ANDERSON. Actually, that was part of the agreement. The establishment of the cooperative agreement was to set up the framework so they could do that and that was the reason for the broad tasks that were laid out in that framework.

Chairman LAMPSON. Did they just ignore that?

Mr. ANDERSON. I can't speak for them.

Chairman LAMPSON. But they didn't do it?

Mr. ANDERSON. They have not achieved enough to the point where we are not here today still looking for direct funding.

Chairman LAMPSON. I think I share some perplextion through all of this, Mr. Chairman, but I will yield back my time. I don't know what else to ask at this point.

Chairman MILLER. Now you are yielding back my time. Now you are entitled to your own five minutes. Do you wish to yield it back?

Chairman LAMPSON. I pass.

Chairman MILLER. Mr. Hall. I think Mr. Sensenbrenner actually needs to be here to yield it to you. All right. We will be in recess until 5:30 when we will hear from Dr. Orbach, which will be very interesting to all of us, since all the documents and all the interviews have suggested that he was not particularly involved in any of the decisions that we have been interested in. The panel is dismissed and we will reconvene at 5:30 for the testimony of Dr. Orbach.

[Recess]

Chairman LAMPSON. The meeting is called back into order and at this time I would like to introduce our witness, Dr. Raymond Orbach, Under Secretary for Science at the U.S. Department of Energy. And as our witness, I am sure, knows, spoken testimony is limited to five minutes. It is also the practice of the Subcommittee to take testimony under oath. Do you have any objections to being sworn in?

Mr. ORBACH. No, sir.

Chairman LAMPSON. And you also have the right to be represented by Counsel. Are you represented by Counsel at today's hearing?

Mr. ORBACH. No, I am not.

Chairman LAMPSON. Please stand and raise your right hand.

[Witness sworn]

Chairman LAMPSON. Thank you, sir, and you may begin with your testimony.

STATEMENT OF DR. RAYMOND L. ORBACH, UNDER SECRETARY FOR SCIENCE, U.S. DEPARTMENT OF ENERGY

Dr. ORBACH. Well, in the interest of time, let me just say that, first of all, Chairman Lampson and Members of the Committee, I appreciate the opportunity to speak with you today. With the fiscal year 2003 budget, funding and responsibility for the Savannah River Environmental Laboratory was transferred from the Office of Environmental Management to the Office of Science, our Environmental Remediation Sciences Division. The Office of Science supports fundamental basic research. All of the research that we fund, laboratories and universities, including facilities construction and operations, is awarded through a peer review, merit-based process. The Office of Science Environmental Remediation Sciences' basic research program seeks to provide better understanding and control the mobility of subsurface contaminant plumes across the DOE complex.

From fiscal year 2003 to fiscal year 2005, the Environmental Remediation Sciences Division worked closely with the Savannah River Environmental Laboratory in an effort to reorient the laboratory's research programs and to develop a peer reviewed program of research that was aligned with that mission. The 2006 budget request for the Office of Science required difficult budget decisions across all of our programs. We had to decide to end legacy funding for SREL. However, we have then and continue to encourage them to submit proposals to the Environmental Remediation Sciences Program that address the Program's priority research objectives. We would be pleased to have SREL a part of our program. Thank you, Mr. Chairman, and I am happy to answer any questions you or Members of the Committee may have.

[The prepared statement of Dr. Orbach follows:]

PREPARED STATEMENT OF RAYMOND L. ORBACH

Thank you, Chairman Miller and Chairman Lampson and Members of the Committees, for the opportunity to speak to you today about the Department of Energy's (DOE) Office of Science's association with and support for the Savannah River Ecology Laboratory (SREL). As you well know, the Office of Science supports fundamental basic research that underpins the Department's complex mission areas of energy, environment, and national security. All of the research the Office of Science funds at the laboratories and universities, including facilities construction and operations, are awarded through a peer reviewed merit-based process. This rigorous process is essential to maintaining the quality of our research programs.

SREL has historically received the majority of its funding from DOE, including the Office Science and its predecessors, the Office of Environmental Management, and the Savannah River Operations office. In Fiscal Years (FY) 2001 through 2005 the Department provided $7 to $8 million per year to SREL. The Department's Office of Environmental Management provided this funding through FY 2002. During the same period, SREL received additional funding from the University of Georgia and some external grants, the latter together totaling between $1.5 million and $3.5 million per year. This gave SREL a total budget of roughly $10 million per year during this period. It is important to note that the DOE funding provided nearly all of the infrastructure and administrative support for SREL, even though SREL was operated and managed by the University of Georgia.

With the FY 2003 budget, funding and responsibility for SREL was transferred from the Office of Environmental Management to the Office of Science and placed in the Office of Biological and Environmental Research, Environmental Remediation Sciences Division. This decision was part of an effort by the Department and the Administration to focus the DOE Office of Environmental Management program on clean-up and to centralize basic research efforts in the Office of Science. The Office of Science's Environmental Remediation Sciences Division funds peer-reviewed scientific research focused on a major DOE mission challenge: understanding and controlling the mobility of subsurface contaminant plumes across the DOE complex. The behavior of these plumes, whose underground mobility poses a serious and long-term environmental challenge, is not adequately understood. The Environmental Remediation Sciences basic research program seeks to provide better understanding and control of subsurface contaminant plumes, a critical environmental problem. SREL's research program is focused on terrestrial ecology and radioecology as it pertains to the Savannah River Site and thus was not well aligned with the Environmental Remediation Sciences program's priority focus on subsurface contaminant mobility and plumes.

Prior to FY 2003, DOE funding for SREL was not determined on the basis of competitive peer-review. From FY 2003 through FY 2005, the Environmental Remediation Sciences Division worked closely with SREL in an effort to reorient the laboratory's research programs and to develop a peer reviewed program of research that was aligned with the Environmental Remediation Sciences mission-based program. This effort included a programmatic alignment review conducted by an external panel in the fall of 2003, a research project review of SREL's individual research programs conducted by Office of Science program managers in the summer of 2004, and a review by a Biological and Environmental Research Advisory Committee, Committee of Visitors in the fall of 2004. The reviews addressed how best to align the SREL's efforts with the Office of Science mission and provided recommendations to that end. The reviews were not asked to address whether SREL should or should not be funded, and results of the reviews were provided to SREL. During this time, FY 2003 through FY 2005, the Office of Science provided approximately $8 million per year to SREL.

The FY 2006 Budget Request for the Office of Science required some difficult budget decisions across all of our programs, including a reduction of approximately $10 million in the Environmental Remediation Sciences Division. The Environmental Remediation Sciences Division evaluated its research portfolio on the basis of DOE mission and scientific priorities in light of the reduction and decided to maintain the portfolio of scientifically peer-reviewed research focused on subsurface contaminants and plumes and to terminate support for research in surficial science, including terrestrial ecology and radioecology. While SREL had some expertise in the areas of subsurface contaminant processes, the bulk of its expertise was in the research areas that were terminated. The decision to focus the Environmental Remediation Sciences research portfolio more directly on DOE mission needs ended legacy funding for SREL. However, we encouraged SREL to submit proposals to the Environmental Remediation Sciences program that addressed the Program's priority research objectives.

In FY 2006, the Office of Science provided $1.0 million in cooperation with the Office of Environmental Management, which provided $3 million, and the National Nuclear Security Administration, which provided $300,000, in support of a transition of SREL's funding. The Office of Science has provided no additional funds since then. Budget language in FY 2006 encouraged SREL to compete for research funding within the Office of Biological and Environmental Research's overall research program. During fiscal years 2006 and 2007, SREL has submitted one proposal to the Environmental Remediation Sciences Division. That proposal, submitted in 2006, fared poorly in peer review and was not funded.

In summary, let me stress the respect that the Office of Science holds for the long history and important contributions, including education and community outreach, provided by the Savannah River Ecology Laboratory. We made the decision to terminate funding for surficial science, including radioecology and surficial fate and transport, only after carefully considering and weighing the fundamental science needs of the DOE complex and the potential benefits of continued support in these areas. It was our decision that the science associated with subsurface contaminant migration was the clear priority for DOE's long-term environmental remediation and legacy management needs. We continue to support that decision. We also continue to encourage SREL, as we have in recent years, to direct its research interests towards the Office of Science's mission-driven priority research areas and would be pleased to have SREL make additional efforts to compete for funding in this area.

Thank you again, Chairman Miller and Chairman Lampson, and I am happy to answer any questions you or Members of the Committee may have.

DISCUSSION

BACKGROUND ON THE INVOLVEMENT OF THE OFFICE OF SCIENCE

Chairman LAMPSON. Thank you, Dr. Orbach. At this time I will deal myself the first five minutes and I just have a few questions here. Did the Office of Science play any role in evaluating the proposed tasks that SREL developed with the Savannah River Site? Did it play any role in evaluating the proposed tasks that Savannah River developed with——

Dr. ORBACH. To my knowledge, no, that was done separately. The site services that the laboratory provides were outside of the interests of the Office of Science.

Chairman LAMPSON. In 2006 and 2007?

Dr. ORBACH. In 2006 and 2007.

Chairman LAMPSON. Did the Office of Science help Environmental Management at headquarters run a peer review, a technical review, a merit review or any other flavor of review?

Dr. ORBACH. Yes, from time to time we worked closely with the applied programs in the Office of Science, to assist them not only in the peer review process, but also in collaborative workshops and other joint relationships.

Chairman LAMPSON. And we are specifically talking about the SREL tasks that were evaluated in 2006 and 2007, specifically?

Dr. ORBACH. Mr. Chairman, I don't know and I am afraid I will have to answer for the record on that.

[The information follows:]

INSERT FOR THE RECORD

In December, 2006, the Office of Environmental Management contacted the Office of Science's Biological and Environmental Research program, indicating that they planned to review work proposed to be done by SREL. The Office of Environmental Management requested materials relating to past Biological and Environmental Research reviews of SREL and for recommendations of reviewers to assist Environmental Management in their review of SREL. The Biological and Environmental Research program provided information on past reviews of SREL (the charge letter, review report, and panelists) and offered to provide assistance in identifying reviewers for Environmental Management. Following this exchange of information, there was no further interaction between the Offices of Science and Environmental Management regarding Environmental Management's review of SREL.

Chairman LAMPSON. All right. Did the Office of Science have any role in negotiating the new cooperative agreement with SREL?

Dr. ORBACH. To my knowledge, we did not.

Chairman LAMPSON. Were you involved in the meeting with the Secretary on May 20, 2005, to get his approval for a deal on SREL?

Dr. ORBACH. I had spoken with the Secretary. I can't remember if I was involved in that specific meeting, but we have discussed the Savannah River Environmental Laboratory and also the Savannah River Site.

Chairman LAMPSON. Were you present at the May 11, 2005 meeting where Dr. Bertsch was asked to provide a business plan?

Dr. ORBACH. I do not remember my being present there.

Chairman LAMPSON. Do you only fund research programs for their ability to provide short-term deliverables in the current fiscal year that are critical to your mission?

Dr. ORBACH. I would say just the reverse. We tend to fund programs that are longer term because we deal with the basic sciences.

Chairman LAMPSON. And do you see a clear line between basic research and furthering the broad mission needs of the Department in advanced or applied technology work?

Dr. ORBACH. The distinction is not so clear. Because we are a mission-oriented agency, the research that we perform or support that is basic research is driven sometimes by intellectual curiosity and sometimes by what we call use-driven basic research, that is, there is a reason for the basic research and a focus. When you look at the applied programs, they also will be doing some research which some people would call basic. So there is a fuzzy line between basic and applied and we tend not to want to make a sharp distinction.

CONFIDENCE IN SREL

Chairman LAMPSON. Dr. Orbach, did someone just lose confidence in SREL at some point? Did something happen at SRS or at the lab itself that caused someone to get the attention of this little place and decide that it was not appropriate to be continued as it has been?

Dr. ORBACH. I don't think so. This laboratory is well known. It is a very successful laboratory. It has a 50-year history of major scientific discovery. We all know about the laboratory and frankly, we were very proud to be part of the laboratory support structure. The budget exigencies of the fiscal year 2006 budget were so difficult for us that we had to prioritize our funding and it was at that point that we made the decision to cease the legacy funding for the laboratory.

MORE ON SREL FUNDING

Chairman LAMPSON. Is there anything that we can do to try to either replace or do something with the funding that we can bring this back on line and keep it going for no other reason than to have the citizens who live around that area, their concerns satisfied?

Dr. ORBACH. Sir, I think that rests with the laboratory. In terms of the Office of Science, we have encouraged the laboratory to submit proposals to us in areas that we can currently fund and we have been eager to work with them in that regard and we would hope that they would take advantage of that opportunity and work with us.

Chairman LAMPSON. You mentioned in your written testimony that they had fared poorly in peer review on one of those research funding efforts. Do you have any personal knowledge about that? Why would they have fared so poorly after having such a great reputation?

Dr. ORBACH. Well, if you are referring to the response to our fiscal year 2006 request, they did submit a proposal. It was not reviewed well. I do not know the details of why it was not well reviewed, but it was not well reviewed and therefore we took a negative decision.

Chairman LAMPSON. Thank you, Dr. Orbach. My time has expired. I will yield to Chairman Miller.

PEER REVIEW OF SREL TASKS

Chairman MILLER. Thank you, Dr. Orbach. I apologize for not being here for your oral testimony, but I did have a chance to read your written testimony. I assume that your oral testimony was similar.

Dr. ORBACH. Similar and short.

Chairman MILLER. An abbreviated version. The Reader's Digest version, perhaps. Dr. Orbach, what strikes me is that the testimony, your written testimony and your oral testimony is dissimilar to all of the other reasons given for the conduct of the Department of Energy in the last two years. No one else has talked about a decision to focus research on subsurface contamination and how it is transported and where it goes and what happens to it and not—surface contamination and that surface contamination is largely what SREL does. Is that a quick summary of your——

Dr. ORBACH. That is a correct statement.

Chairman MILLER.—statement? And a decision about SREL was largely based on scientific grounds or scientific priorities, but none of the testimony we have heard here today really supports that that was the decision and how that decision was made, that there was some discussion that it would be—would be peer reviewed, but there obviously was no peer review. Dr. Orbach, you are, I am sure, familiar with how peer review is done. Is it done without generating documents? Does it not usually include criteria, memoranda, a chance to respond, and on and on?

Dr. ORBACH. Absolutely, it includes that and we have a written record of every step in the peer review process.

Chairman MILLER. All that we have gotten from the Department, with respect to the decisions made on the various tasks, are the descriptions of the tasks and the explanation, the only written explanation the Department has given is a column that says at the top DOE critical need, and then beneath it says none. That is not really the result of a peer review, is it? That is not really how peer review works, is that you just say no?

Dr. ORBACH. Well, there was a peer review process for the one proposal that——

Chairman MILLER. Right, that one proposal that was not—Right, that one proposal that was not——

Dr. ORBACH. And that one I believe we have provided to the staff. We met on Monday and we will provide all of the information. I think we did it on Monday, but I don't know where that is in the pipeline.

SREL COMPETITION

Chairman MILLER. In competitive grants, I assume there is also a fair amount of documentation involved in competitive grants. There is usually a request for proposal. There is criteria provided. Anyone applying for the grant has to apply in writing, not by a telephone call.

Dr. ORBACH. Correct.

Chairman MILLER. And there was no competition for any of the projects, any of the tasks done by SREL, isn't that correct?

Dr. ORBACH. Well, I don't know which tasks you are referring to. At the time that——

Chairman MILLER. Well, were any of the tasks that were done by SREL, are those now being done by someone else as a result of competition?

Dr. ORBACH. If it is funded by the Office of Science, it is in response to a request for proposals and it is peer reviewed.

Chairman MILLER. Okay. I have no further questions.

Chairman LAMPSON. Member Hall, you are recognized for five minutes.

OFFICE OF SCIENCE FUNDING PROCESS

Mr. HALL. I may be the only one on this whole committee that doesn't want to ask him hardly anything. I didn't really ask for him to be here, but since Mr. Sensenbrenner wrote me an ugly letter, I had to respond to it and he said the strong letter follows. I have about three questions. You are a good friend of mine and I don't want to push around very much, but approximately how many funding requests does the Office of Science receive each year?

Dr. ORBACH. We receive thousands.

Mr. HALL. And do limitations on funding sometimes require your office to turn down requests?

Dr. ORBACH. Yes, unfortunately more often than not. All of our proposals are peer reviewed and some are not peer reviewed well. Others are peer reviewed very, very well and if I were to strike an average across the Office of Science, I would say that we are only able to fund about half of the proposals that are well reviewed, the proposals that really have fine science in them, just because of limitations of funding.

Mr. HALL. Sometimes you turn them down and admittedly they are valuable and high-quality science?

Dr. ORBACH. Yes, sir.

Mr. HALL. You would really like to have an unlimited source to fund anybody that makes a request that gives you the indication that they can carry it out and that the government then will get good services for what we are buying?

Dr. ORBACH. Yes, sir.

WHY WAS SREL FUNDING ZEROED OUT?

Mr. HALL. My next question is, when was the Office of Science funding for SREL zeroed out in 2005, do you know?

Dr. ORBACH. When or why?

Mr. HALL. Why.

Dr. ORBACH. Yes, I do.

Mr. HALL. Could you tell us?

Dr. ORBACH. The problem we had was a very difficult budget year for fiscal year 2006 and the consequence of that was that the budget for the program that funded environmental research and remediation science was cut by almost $10 million, from somewhere around $60 million to $50 million. And we had to make some very difficult decisions at that time and we decided to focus on the area that we felt the research was seriously needed for and that was subsurface contaminant flow. And it was with regret, but we had to then eliminate the funding in fiscal year 2006 for the Savannah River Ecology Laboratory. I think I said environmental before. SREL. And nevertheless, there was an agreement and we provided a million dollars.

Mr. HALL. But prior to that, let us talk about the zeroing out of the funds. Be a little more specific. Why did you zero them out?

Dr. ORBACH. We had to make a hard decision of priorities with a limited budget and the——

Mr. HALL. What was your budget?

Dr. ORBACH. The budget for this program was $58.1 million in 2005 and was $48.6 million in 2006. That was the President's request and we had a very large cut.

Mr. HALL. And do you see a continued DOE or Office of Science need for any research being performed at SREL?

Dr. ORBACH. The answer is yes. On a peer review basis and according to the areas that we have chosen to fund in our mission, we believe that there is strength at SREL and we have encouraged them to submit proposals for funding.

Mr. HALL. The zeroing out was at what level?

Dr. ORBACH. That was, if my memory serves me, about $8 million.

Mr. HALL. And who made that decision?

Dr. ORBACH. Ultimately I did, but it was done by our staff and I approved it.

Mr. HALL. You had to get the recommendation of the Secretary?

Dr. ORBACH. That is correct.

Mr. HALL. And did you have anything to do with the rework of it? And he testified here that Charlie Anderson and Jill Sigal put a proposal together in an effort to save the——

Dr. ORBACH. We had informed the laboratory, prior to the zeroing out, that we were anxious to work with them to change their direction of research to be more coincident with that research that we were funding. And then when the actions you were referring to occurred for fiscal year 2006, we joined in that and we regarded that as yet another year to give the laboratory an opportunity to reorient its research so that it would be in our funding area.

Mr. HALL. You gave them that opportunity of work that was spawned by Jill Sigal and——

Dr. ORBACH. Yes.

Mr. HALL.—Charlie——

Dr. ORBACH. We teamed up with Environmental Management. We added a million and I think EM put in $3 million and I think NNSA about $300,000 and this was to give them an opportunity, from our perspective, our million dollars, to continue to try to reorient their——

Mr. HALL.—enough about them to try to breathe some life back into them and start them off with $4 million-plus for one year and——

Dr. ORBACH. That is correct.

Mr. HALL.—authorized them to look elsewhere for——

Dr. ORBACH. And to encourage them to continue to work with us.

Mr. HALL. And you still feel that way about them?

Dr. ORBACH. Yes, I do.

Mr. HALL. I yield back my time.

Chairman MILLER. Mr. Inglis for comments.

CUTTING ENVIRONMENTAL REMEDIATION SCIENCES PROGRAM BUDGET

Mr. INGLIS. Thank you, Mr. Chairman. Dr. Orbach, I think you just said the remediation program, make sure I get this right, went from 2005, in 2005 it was $58 million, in 2006 it went down to $46 million?

Dr. ORBACH. I may get the numbers wrong. My memory is $58.1 in 2005 and $48.6 in 2006.

Mr. INGLIS. Right. And that is for a whole series of remediation kind of efforts, is that right?

Dr. ORBACH. Well, it is for our Environmental Remediation Sciences Program, yes, sir.

Mr. INGLIS. And so of that, SREL would have been $4 million or so, is that——

Dr. ORBACH. Well, it was $8 million in 2005.

Mr. INGLIS. $8 million in 2005.

Dr. ORBACH. Approximately.

Mr. INGLIS. And so 2006 it would have gone to—the request was—is that the point it went to zero, is the request?

Dr. ORBACH. Yes, that is correct.

Mr. INGLIS. So I suppose the question we hit on earlier that I guess is really a policy, perhaps a policy debate for Members of Congress, aimed at the Administration is whether it was wise to cut the remediation budget from $58 million to $48 million. I guess that seems to be what is at issue here, is some sort of policy dispute about that.

Dr. ORBACH. That could well be the case. It was a difficult year for the entire Office of Science budget. Fiscal year 2006 was, not just for this program, but across the program in general. Everybody had a hard time and we were making priority decisions across the board.

Mr. INGLIS. So that helps sort of anticipate the next question. Did you have any sense, in this policy debate and perhaps my colleagues on the other side want to say the Administration was wrong to cut remediation, that they were not concerned about the environment, let us say the normal kind of attack, not concerned about the environment, they want to pollute the earth or whatever and so therefore they would cut the remediation budgets but plus up, say, payments to big defense contractors or something. I don't know. But I mean does that fit with the facts here or is it more that across board you had difficulties and there is really no rat here? I mean is that what the——

Dr. ORBACH. That would be the latter, sir.

Mr. INGLIS. Yes.

Dr. ORBACH. You have to look at the entire Administration budget and I think we were not badly treated compared to the rest of the budget. It was a difficult budget year across the board and we played our role in that.

HOW THE OFFICE OF SCIENCE PROVIDES FUNDING

Mr. INGLIS. Yes. So then the question becomes how did the Office of Science typically provide funding for its labs and other research facilities?

Dr. ORBACH. What we typically do on a peer review basis, about half of our budget is spent on facilities and operations and the other half on research, and that half on research all peer reviewed either by mail or panels or by visits. The first half, the facilities, have review committees. They are reviewed on roughly a three-year basis. So everything we fund is reviewed by the outside scientific community.

Mr. INGLIS. And sometimes they are renewed and sometimes they are not?

Dr. ORBACH. Sometimes they are renewed and sometimes they are not.

SREL FUNDING DECISION

Mr. INGLIS. And is that how SREL was treated here? What was the situation there?

Dr. ORBACH. I think this was different because this was a shift that we made in research areas, which also we do from time to time as our mission either changes or becomes focused. There was never an issue about the quality of SREL. It is an extraordinary laboratory and it does a significant job for the Nation's needs. The problem we had was deciding whether to put money into surface contamination versus subsurface, and given the limited budget we had and we made the decision to do the latter.

Mr. INGLIS. And does that mean that SREL was good at one and not the other?

Dr. ORBACH. That is correct.

Mr. INGLIS. They had expertise. They are good in a lot of things, but they had particular expertise in the one as opposed to the other?

Dr. ORBACH. Well, they have had a history of 50 years of work in terrestrial ecology. We encourage them and in fact we do fund research at SREL for some investigators in areas related to subsurface contaminant motion.

Mr. INGLIS. Yes.

Dr. ORBACH. And we had been working with them over the period that we were involved with them to try and get them interested and directed in that direction.

Mr. INGLIS. I yield back, Mr. Chairman.

PRIORITIZING SURFACE AND SUBSURFACE CONTAMINATION

Chairman MILLER. Thank you. Dr. Orbach, our staff has been looking at the decision surrounding SREL for months. For weeks anyway. We have had extensive interviews with everyone involved in the decision. We have pursued the names of others given to us as a result of those interviews. We have asked for all the documents involved in decisions. And after weeks of looking at these decisions we are hearing for the first time that there was a decision to make research in subsurface contamination a higher priority than surface contamination. But none of the people who actually made the decisions pertaining to SREL in the last two years have mentioned that at all. If none of them have mentioned that, does it not seem to you, as it seems to me, that those were not actually their reasons?

Dr. ORBACH. Sir, this is not a new bit of information. We had conveyed this in February of 2005 when the 2006 budget was put on the table. Everyone saw it. It was public at that time. I can give you a reason why we did it, but——

Chairman MILLER. Well, no, that is not what I am asking. In the last two years, after that initial decision by OMB that you were involved with to eliminate all funding, which Mr. Allison said came completely out of the blue to him. There had been two years of decisions about SREL. We talked to everybody involved in those decisions, from the Deputy Secretary down. No one has mentioned this before, in weeks of interviews, in weeks of staff interviews and requests for all of the documents involved in the decision, and in all of this, no mention of this decision to give a higher priority to subsurface contamination research as opposed to contamination research. We are hearing this for the first time. In the last day or two, we have heard from the minority side an insistence that is coming directly from the Department of Energy that you be added to the witness list, which has been puzzling to us, because in all of our interviews and in all of the documents you do not appear to have played a role in the decisions, and the reasons that you now give, now we are hearing for the first time. Doesn't it seem unlikely to you, as it does it to me, that if we have never heard these decisions before, they don't appear in any of the documents, no one in any interview who was involved in the decisions has mentioned these reasons, that those weren't the reasons?

Dr. ORBACH. Sir, I can't answer your question because I don't know what all the documents say and it may be that after we made that decision, that that was no longer on the table and perhaps people weren't dealing directly with it. But the decision was not a secret one. It was made public in February of 2005. We communicated it to the laboratory. We have worked with the laboratory since then.

Chairman MILLER. Well, are you saying now, is it your testimony now, that what has happened in the last two years to winnow down and winnow down the task given to SREL from a $20 million, five-year agreement to a $1 million base with $3 million or $4 million in task funding to a million dollars base with about $1.2 million, which is entirely for six discreet tasks but only those tasks, that all of that has actually been the way the Department of Energy has put into effect the decision made two years ago to place less emphasis on surface contamination research and more on subsurface contamination?

Dr. ORBACH. Sir, we were not a party to the last two years of negotiations. All I can tell you is what happened in our budget submission for fiscal year 2006. After that it seemed to me as a new ballgame and other factors may have entered, but we were not longer a party to it except for that $1 million that we put in to help them make the transition.

Chairman MILLER. So your testimony is, so far as you know, the reasons you gave for a decision in 2005 do not pertain, did not influence the conduct of the Department of Energy since then?

Dr. ORBACH. I do not believe that they did, but I don't know for sure because I haven't been a party to it. It is very possible that they may have, but I was not a party to them.

SRS COMPLYING WITH ENVIRONMENTAL LAWS WITHOUT SREL

Chairman MILLER. Okay. Again, Mr. Allison, whose job it is to manage the site and who I think has been treated badly in the Department of Energy's descriptions of what has happened and what the decisions were, obviously a very competent man to be given the task of managing a $1.2 billion a year site, he said that he was completely taken by surprise by the suggestion by the President's budget that recommended elimination of all funding for the Savannah River Ecology Laboratory. He said no one talked to him about it and he was not consulted at all. And from all of the other data, all of the other information we have gotten from all of the interviews, reviewing all the documents, there were a variety of tasks at Savannah River that SREL performed that do not seem like they were just nice to have, but critical needs, most notable of which is environmental compliance, compliance with environmental laws; that that lab needs someone measuring contamination, someone analyzing contamination, someone knowing what is going on in the ecology of that site; that that is not simply assigned to curiosity of scientists, that is something required for compliance with environmental laws. Did you take into account and those involved in the decision in 2005 take into account the Savannah River Site's need to continue to do that, to comply with environmental laws, and how it would be done if the SREL went away?

Dr. ORBACH. Sir, we made our decision on the basis of the science and the prioritization of the science. The Environmental Management Program and NNSA were contributors to the 2006 budget and I assume that the issues you just raised were the reasons why they were present in the 2006 budget. But our job was to fund basic research and so we made the very difficult and very arduous decision to terminate our legacy funding.

Chairman MILLER. All right, my time has expired. Mr. Lampson.

CONGRESSIONAL FUNDING FOR SREL

Chairman LAMPSON. Thank you, Mr. Chairman. Dr. Orbach, would you be either personally or professionally disappointed if Congress found a way to continue the funding of SREL?

Dr. ORBACH. That is a difficult question to answer. Congressional direction is something that we work with and carry forward. If it is in the President's budget, obviously I will support it.

Chairman LAMPSON. I don't have any further questions.

Chairman MILLER. Thank you. Mr. Hall. Mr. Inglis.

Mr. INGLIS. Dr. Orbach, to Mr. Lampson's question about, essentially, earmarks. I take it those are generally not helpful to you in your position, is that right? In other words, you basically end up spending money on things that scientists wouldn't spend money on but maybe constituents want Members of Congress to seek money for. Is that too harsh of a statement?

Dr. ORBACH. I think that is a rather harsh statement. I think Congress has a responsibility which it takes to allocate funds and we respect that responsibility, sir.

Mr. INGLIS. Yes. For example, the hydrogen programs of DOE, the complaint that I hear from DOE, quietly, is, you know, Congress ends up earmarking the money away so that it is some demonstration project here and one over there and one down there and you end up with the money being eaten up that would have gone to fund real scientific breakthroughs and now it is all spent. And so maybe you will have to comment on that. I am testifying now, but you know, it is a concern, which is that we—you know, whenever we have peer reviewed kind of work, like your are trying to do, and when we have that at NSF it is such a great model.

And I realize that scientists aren't immune from politics either, but still, when there is some scientific criteria involved, it may end up with truly focusing scarce resources on the most pressing needs, which I take back to the subject at hand, is what was about going on with the decision in 2005. Chairman Miller was asking a number of questions about why it would be essentially that they wouldn't have heard from the Department, in documentation production requests, about this decision to focus on subsurface rather than surface contamination. But might it be that in 2005, having made that decision, at that point SREL was sort of out of the loop coming to 2006, 2007, maybe, because the Department has made a decision and so therefore, in 2005—have I got the right—no, 2006, coming into the 2006 year, right? So therefore, perhaps it makes sense that you wouldn't have heard much. The Majority's Committee's request would not have turned up much because they would be out of the loop, SREL would be out of the loop at that point, is that right?

Dr. ORBACH. That would be correct, sir.

Mr. INGLIS. Because a policy decision had been made and now the policy decision is being implemented, basically.

Dr. ORBACH. That is correct. The decision was made in December of 2004 when the President's budget was being formulated for delivery to Congress in February of 2005. We were not allowed and it is improper to make that public until the President's budget was received by Congress. That was one of the difficult aspects for us, because we knew the answer but we couldn't communicate it. But as soon as the President's budget was presented to Congress we did communicate and as you say, there is not much you can do after that except to encourage the laboratory to compete for funds in subsurface contamination.

Mr. INGLIS. Thank you.

Chairman LAMPSON. Would the gentleman yield before he yields back his time?

Mr. INGLIS. Sure.

MORE ON SUBSURFACE VERSUS SURFACE CONTAMINATION

Chairman LAMPSON. One of the difficulties that they faced and the President faced was trying to balance his budget and this particular project came up short and didn't make the cut. That is basically what I am understanding right now. But that doesn't mean that it is not a critically important task and it would have an impact the community. And there have been some questions raised over time that could have long-term impact on people and even the environmental life around there. There was concern raised in the late 1990s about their finding, I think, something called flash in the environment that could do serious harm to people as well as to the animals there.

It seems to me that if we had the concern enough about what those people are raising as concerns, that maybe we would choose to try to fund it and that is not a slap in the face of anybody, but it is a recognition that we have an obligation to try to understand, as best as we possibly can, what this nation needs and what we can do to make sure that we keep it healthy and safe. And I just wanted to say that. Hopefully, you know, that might be something that we can discuss and possibly do. And I yield back. And I guess I am out of time, but it did raise a question for Dr. Orbach, with the Chairman's indulgence. I tell you, there is some reason to focus on subsurface rather than surface. What is the reason?

Dr. ORBACH. The subsurface contamination is very serious. We have leaking tanks at Hanford. We have leaking tanks at Idaho. We have subsurface pools at Paducah, Kentucky. It is not unreasonable to think that almost every one of these nuclear sites has some kind of subsurface problem. They are very serious. One can simplify it by saying that if push came to shove, we know how to deal with surface contamination. We cleaned up Rocky Flats, for example. So if the worst happened and we had to clean it up, we know how to do that. There is no way to clean up subsurface contamination. It could be a thousand feet down and can be affecting the rivers. I mean, it is very, very dangerous.

Chairman LAMPSON. So the surface is known and quantifiable. The subsurface is where we need a lot of scientific work to figure out what happens down there.

Dr. ORBACH. That is exactly our decision. Yes, sir.

Chairman LAMPSON. Thank you.

Chairman MILLER. I think that is it for the questions. Thank you, Dr. Orbach.

Dr. ORBACH. Thank you.

DISCUSSION

Chairman MILLER. And at long last it appears that we are at the end of the testimony.

Chairman LAMPSON. It would be nice if we were at the end of our day.

Chairman MILLER. Right. Democracy dies behind closed doors. When a government agency gives reasons for decisions that are not real reasons, a door closes. It is hard to believe the reasons given by the Department for the actions that they have taken. They are simply demonstrably untrue. The Department has said that there was a decision to make all funding for SREL peer reviewed. There was no peer review. The Department said that they had decided to make the funding competitive. There was on competition.

We are now hearing for the first time that there was a decision two years ago that appears to have had no influence at all in the conduct of the Department in the last two years, to make a priority of one kind of research over the kind of research done at the Department. Again, we are hearing about that for the first time after weeks and weeks of asking we are hearing about that for the first time in just the last two days. And there appears to have been no contingency plan, no cost benefit analysis by the Department of what to do with the necessary tasks that SREL was performing if SREL went away. The reasons given by the Department just do not hold up to scrutiny.

Mr. HALL. Will the gentleman yield?

Chairman MILLER. Not yet. Not yet.

Mr. HALL. I will wait right here.

Chairman MILLER. The Minority has belittled the concerns of the Majority. The Republicans have belittled the concerns of the Democrats about this decision regarding SREL and said that we have intimated there is something nefarious, there is something sinister. I don't know what the real reasons for the decisions, but when a government agency gives reasons that simply do not stand up to scrutiny, they need to expect there to be suspicions about reasons, real reasons that will not survive the light of day. The most likely single, from my examination of this, the most likely explanation is that somebody somewhere just made a sloppy, lazy quick ill-informed decision.

We have got two labs at that site. We don't need two labs. Let us just have one lab. Let us close the little one. But as is frequently the case with sloppy, lazy, ill-informed decisions, it proved to be gloriously stupid and rather than defend that decision, the Department has come forward with one explanation after another that simply does not hold up. It is just hard to imagine that the reasons that have been given by the Department over the course of weeks with respect to the decisions about this lab, are the real reasons.

And now, Mr. Hall, you may have the floor.

Mr. HALL. I move to strike the last word. That is your impression of what you heard and that is the reason we have court reporters and we take it down. We write it down for people to read later and to know what was really said. I think this Committee has heard testimony under oath from honorable men and women on both sides of the docket that gave their testimony to the best of their knowledge. If you really want to analyze this entire situation, it started out with an effort to belittle the Department of Energy, to take a hard shot at Secretary Bodman, to disgrace two of their employees, Jill Sigal and Charles Anderson, and you failed miserably. I yield back my time.

Mr. INGLIS. Will the gentleman yield?

Chairman MILLER. Either one. I am not sure. We are striking the last word again. If you wish to say something, some valedictory remarks, Mr. Inglis, why don't you go ahead and do it?

Mr. INGLIS. Yes. I think, Mr. Chairman, it is way over the top to use the words demonstrably untrue, way over the top. I mean that is one sense accusing the Department of Energy of lying, which is quite an accusation. What you have before you is some witnesses who are doing a work at the Department of Energy to try to solve our nation's challenges and to accuse them of speaking untrue statements is just, it takes this attack mode to just a very unacceptable level, I think. I mean, we really should be measured in our words, not accuse them of lying to us. We should just say you know, listen, we have got a difference of opinion here and be straight up about that. There is no problem with having difference of opinion but really, I think that to say, in sort of a concluding remark here that sort of gigs the Department again by saying that they are demonstrably untrue, perhaps the Chair wants to retract those words. I don't know, I would think you would.

Chairman MILLER. Actually not. I was trying to be measured by saying it was demonstrably untrue. I have correspondence from the Department that said the decision was based upon peer review. We have had testimony today that, and all the documents and our staff interviews all support there was no peer review. There was no peer review of these decisions in the last two years, but the Department has represented to me, to Mr. Lampson, in correspondence, the decisions were based on peer review. That is demonstrably untrue. It has been demonstrated to be untrue by the testimony today. Mr. Lampson, any valedictory remarks?

Chairman LAMPSON. I was concerned about SREL and the work that it could do for the United States of America. That is why I came to this, that is why I wanted to find out what possibly went on and I was hoping that if there were any possible way in the world that I could learn something that would help us change that decision and keep a laboratory which has 50 years of fantastic reputation, that it be able to continue its good work for the people around there and for the people of our country. That is why I came here and that is what I was hoping to find out and hopefully we won't drop this. We will continue to look for a way that we might be able to do so.

Chairman MILLER. All right. Now, are the witnesses excused? Excuse me. Again, I want to thank all the witnesses, Dr. Orbach, everyone else for appearing. The record will remain open for additional statements from Members and for answers to any follow-up questions the Committee may ask of the witnesses, but Dr. Orbach, you and all the other witnesses who have already been excused or further excused, and the hearing is now adjourned.

[Whereupon, at 6:32 p.m., the Subcommittees were adjourned.]

Appendix:

ADDITIONAL MATERIAL FOR THE RECORD

UNIVERSITY OF GEORGIA
RESEARCH FOUNDATION, INC.

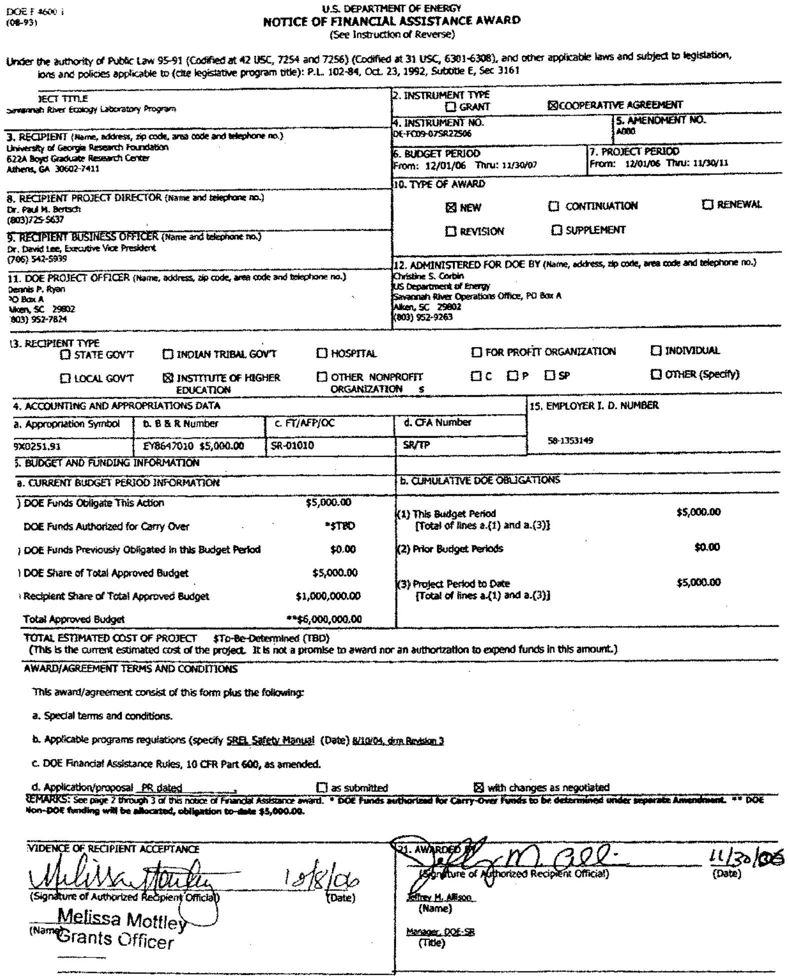
COOPERATIVE AGREEMENT NO. DE-FC09-07SR22506 FOR OPERATION OF THE SAVANNAH RIVER ECOLOGY LABORATORY (SREL) PROGRAM

WITH

THE U.S. DEPARTMENT OF ENERGY
SAVANNAH RIVER OPERATIONS OFFICE
P.O. BOX A
AIKEN, SOUTH CAROLINA 29802

EFFECTIVE DATE: DECEMBER 1, 2006

Base Budget Year Period of Performance (POP): December 1, 2006 thru November 30, 2007
(Note: with four 1-year renewal POP)



DOE F 4600 i
(08-93)

U.S. DEPARTMENT OF ENERGY
NOTICE OF FINANCIAL ASSISTANCE AWARD
(See Instruction of Reverse)

Under the authority of Public Law 95-91 (Codified at 42 USC, 7254 and 7256) (Codified at 31 USC, 6301-6308), and other applicable laws and subject to legislation, ions and policies applicable to (cite legislative program title): P.L. 102-84, Oct. 23, 1992, Subtitle E, Sec 3161

JECT TITLE
Savannah River Ecology Laboratory Program

2. INSTRUMENT TYPE
☐ GRANT ☒ COOPERATIVE AGREEMENT

3. RECIPIENT (Name, address, zip code, area code and telephone no.)
University of Georgia Research Foundation
622A Boyd Graduate Research Center
Athens, GA 30602-7411

4. INSTRUMENT NO.
DE-FC09-07SR22506

5. AMENDMENT NO.
A000

6. BUDGET PERIOD
From: 12/01/06 Thru: 11/30/07

7. PROJECT PERIOD
From: 12/01/06 Thru: 11/30/11

8. RECIPIENT PROJECT DIRECTOR (Name and telephone no.)
Dr. Paul M. Bertsch
(803)725-5637

9. RECIPIENT BUSINESS OFFICER (Name and telephone no.)
Dr. David Lee, Executive Vice President
(706) 542-5939

10. TYPE OF AWARD
☒ NEW ☐ CONTINUATION ☐ RENEWAL
☐ REVISION ☐ SUPPLEMENT

11. DOE PROJECT OFFICER (Name, address, zip code, area code and telephone no.)
Dennis P. Ryan
PO Box A
Aiken, SC 29802
803) 952-7824

12. ADMINISTERED FOR DOE BY (Name, address, zip code, area code and telephone no.)
Christine S. Corbin
US Department of Energy
Savannah River Operations Office, PO Box A
Aiken, SC 29802
(803) 952-9263

13. RECIPIENT TYPE
☐ STATE GOV'T ☐ INDIAN TRIBAL GOV'T ☐ HOSPITAL ☐ FOR PROFIT ORGANIZATION ☐ INDIVIDUAL
☐ LOCAL GOV'T ☒ INSTITUTE OF HIGHER EDUCATION ☐ OTHER NONPROFIT ORGANIZATION s ☐ C ☐ P ☐ SP ☐ OTHER (Specify)

4. ACCOUNTING AND APPROPRIATIONS DATA

a. Appropriation Symbol	b. B & R Number	c. FT/AFP/OC	d. CFA Number
9X0251.91	EY8647010 $5,000.00	SR-01010	SR/TP

15. EMPLOYER I. D. NUMBER
58-1353149

5. BUDGET AND FUNDING INFORMATION

a. CURRENT BUDGET PERIOD INFORMATION		b. CUMULATIVE DOE OBLIGATIONS	
) DOE Funds Obligate This Action	$5,000.00	(1) This Budget Period [Total of lines a.(1) and a.(3)]	$5,000.00
DOE Funds Authorized for Carry Over	*$TBD		
) DOE Funds Previously Obligated in this Budget Period	$0.00	(2) Prior Budget Periods	$0.00
) DOE Share of Total Approved Budget	$5,000.00	(3) Project Period to Date [Total of lines a.(1) and a.(3)]	$5,000.00
Recipient Share of Total Approved Budget	$1,000,000.00		
Total Approved Budget	**$6,000,000.00		

TOTAL ESTIMATED COST OF PROJECT $To-Be-Determined (TBD)
(This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount.)

AWARD/AGREEMENT TERMS AND CONDITIONS

This award/agreement consist of this form plus the following:

a. Special terms and conditions.

b. Applicable programs regulations (specify SREL Safety Manual (Date) 8/10/04, drm Revision 3

c. DOE Financial Assistance Rules, 10 CFR Part 600, as amended.

d. Application/proposal PR dated ☐ as submitted ☒ with changes as negotiated

REMARKS: See page 2 through 3 of this notice of Financial Assistance award. *** DOE Funds authorized for Carry-Over Funds to be determined under separate Amendment. ** DOE Non-DOE funding will be allocated, obligation to-date $5,000.00.**

VIDENCE OF RECIPIENT ACCEPTANCE
10/8/06
(Signature of Authorized Recipient Official) (Date)
Melissa Mottley
(Name) Grants Officer

21. AWARDED BY
11/30/06
(Signature of Authorized Recipient Official) (Date)
Jeffrey M. Allison
(Name)
Manager, DOE-SR
(Title)

COOPERATIVE AGREEMENT FOR THE SAVANNAH RIVER ECOLOGY LABORATORY

Submitted to the U.S. Department of Energy
by the University of Georgia Research Foundation, Inc.

Submitted: February 2006
Revisions Incorporated: November 2006

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SPECIAL PROVISIONS

ARTICLE I - RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award for guidance.

ARTICLE II - STATEMENT OF JOINT OBJECTIVES

Under this Cooperative Agreement (hereinafter referred to as "Agreement"), the University of Georgia Research Foundation, Inc., (UGARF) (hereinafter referred to as "Participant") will continue the Savannah River Ecology Laboratory (SREL) program. SREL provides an independent evaluation of the ecological effects of Savannah River Site (SRS) operations through a program of ecological research, education and outreach. This program will continue basic and applied environmental research with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of industrial and land use activities on the environment. The program will provide DOE and the public with an independent view of the environmental management of the SRS.

ARTICLE III - PROJECT DESCRIPTION

The Participant shall provide the personnel, materials, services, facilities and equipment and otherwise do, or cause to be done, all things necessary for or incident to performing the work set forth in Appendix A, Project Description, of this Agreement.

ARTICLE IV - STATEMENT OF SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE PARTICIPANT

The nature of the Federal involvement and responsibilities are delineated in Appendix A, Project Description, "Substantial Involvement between DOE and the Participant."

ARTICLE V- FINANCIAL SUPPORT

COST SHARING (ALTERNATE 1)

a. Total Estimated Project Cost is the sum of the Government share and Participant share of the estimated project costs. The Participant's cost share must come from non-Federal sources unless otherwise allowed by law. By accepting federal funds under this award, you agree that you are liable for your percentage share of total allowable project costs, on a budget period basis, even if the project is terminated early or is not funded to its completion. This cost is shared as follows:

BUDGET YEAR 01 (BASE YEAR PERIOD OF PERFORMANCE (POP), SEE NOTE 1)
Fiscal Year 2007, Infrastructure Support

Budget Period No.	Budget Period Start Date	Government Share 50%	Participant Share 50%	Total Estimated Cost
1	12/01/06	EM $1,000,000.00	$1,000,000.00	
Total Project		$1,000,000.00	$1,000,000.00	$2,000,000.00

FISCAL YEAR 2007, Scientific Expertise and Environmental Research Needs

Budget Period No.	Budget Period Start Date	Government Share	Participant Share	Total Estimated Cost
1	12/01/06	$TBD		
		OTHER POTENTIAL TASKS		
		DOE POTENTIAL TASKS BASED UPON NEED, MERIT AND FUNDING AVAILABILITY $3,000,000.00		
		NON-DOE FEDERAL AGENCIES POTENTIAL TASKS BASED UPON NEED, MERIT AND FUNDING AVAILABILITY $1,000,000.00		
Total Project		$4,000,000.00	$0.00	$4,000,000.00

Note 1 – December 01, 2006 thru November 30, 2007: There is a potential for DOE and other non-DOE federal agencies to provide funding under this agreement for scientific expertise and environmental research needs. The table above represents the estimated amount of funding that may be available for this effort for the Base Budget Period. None of the estimated funding is guaranteed. The actual level of funding for scientific expertise and environmental research opportunities will be based on, if any, the technical merit, of the work needs of the agencies and the availability of funds for this program. DOE reserves the right to fund, in whole or in part, any, all or none of the funding for scientific expertise and environmental research needs based on a technical peer review.

BUDGET YEAR 02 (RENEWAL POP, SEE NOTE 2)
Fiscal Year 2008 thru 2011, Infrastructure Support

Budget Period No.	Budget Period Start Date	Government Share	Participant Share	Total Estimated Cost
2	12/01/07	EM $0.00	$TBD	
Total Project		$TBD	$TBD	$TBD

FISCAL YEAR 2008 thru 2011, Scientific Expertise and Environmental Research Needs

Budget Period No.	Budget Period Start Date	Government Share **OTHER POTENTIAL TASKS** DOE, POTENTIAL TASKS BASED UPON NEED, MERIT AND FUNDING AVAILABILITY *To Be Determined	Participant Share	Total Estimated Cost
2	12/01/07	TBD		
3	12/01/08	TBD		
4	12/01/09	TBD		
5	12/01/10	TBD		
		NON-DOE FEDERAL AGENCIES POTENTIAL TASKS BASED UPON NEED, MERIT AND FUNDING AVAILABILITY *To Be Determined		
2	12/01/08	TBD		
3	12/01/09	TBD		
4	12/01/10	TBD		
5	12/01/10	TBD		
Total Project		*TBD	$TBD	$TBD

Note 2 – December 1, 2007 thru November 30, 2011: There is a potential for DOE and other non-DOE federal agencies to provide funding under this agreement for scientific expertise and environmental research needs. The actual level of funding for scientific expertise and environmental research opportunities will be based on, if any, the technical merit, of the work needs of the agencies and the availability of funds for this program. DOE reserves the right to fund, in whole or in part, any, all or none of the funding for scientific expertise and environmental research needs based on a technical peer review.

b. If you discover that you may be unable to provide cost sharing of at least the amount identified in paragraph a of this article, you should immediately provide written notification to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award indicating whether you will continue or phase out the project. If you plan to continue the project, the notification must describe how replacement cost sharing will be secured.

c. You must maintain records of all project costs that you claim as cost sharing, including in-kind costs, as well as records of costs to be paid by DOE and other non-DOE Federal sponsors. Such records are subject to audit.

d. Failure to provide the cost sharing required by this Article may result in the subsequent recovery by DOE of some or all the funds provided under the award.

e. **Budget Year 1, December 1, 2006 thru November 30, 2007** - The total estimated cost for the performance of work under this agreement for the first 12-month budget period is $2,000,000.00 for Infrastructure Support. The maximum DOE and other non-DOE Federal agencies potential funding for Scientific Expertise and Environmental Research Opportunities for the first 12-month period is $4,000,000.00, inclusive of non-DOE Federal agencies, of the total allowable costs. The Participant will cost share $1,000,000. Appendix B of this agreement sets forth the total approved budget for the first budget period. The cost share ratios shall apply to the total of all projects undertaken and to any decrease in the total estimated cost of performance resulting from under runs of the total estimated cost or changes in the Project Description or period of performance unless the cost share ratios are adjusted by mutual agreement of the parties. It is agreed that DOE shall fully fund and reimburse reasonable, allowable, and allocable costs for work conducted pursuant to the terms of the Agreement and in accordance with OMB Circular A-21, Cost Principles for Educational Institutions and DOE Financial Assistance Regulations, 10 CFR Part 600. Cost sharing shall be in accordance with 10 CFR 600.123. The Participant's cost share may include cash or allowable in kind contributions of services, materials and property. Although the State of Georgia does not pay relocation expenses, this agreement acknowledges an exception to UGA policy and OMB Circular A-21. In recognition of the Participant conducting this work at a DOE facility that is distant from the main UGA campus, and considering that other employees at the site are reimbursed for moving expenses, and recognizing the importance of recruiting qualified professionals, DOE agrees to reimburse the Participant for relocation costs of new employees reporting to work at the Savannah River Site and the costs associated with the transfer of their household goods and effects.

ARTICLE VI - PAYMENT PROCEDURES – ADVANCES THROUGH THE AUTOMATED STANDARD APPLICATION FOR PAYMENTS (ASAP)

a. Method of Payment. Payment will be made by advances through the Department of Treasury's ASAP system.

b. Requesting Advances. Requests for advances must be made through the ASAP system. You may submit requests as frequently as required to meet your needs to disburse funds for the Federal share of project costs. If feasible, you should time each request so that you receive payment on the same day that you disburse funds for direct project costs and the proportionate share of any allowable indirect costs. If same-day transfers are not feasible, advance payments must be as close as is administratively feasible to actual disbursements.

c. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE.

d. Payments. All payments are made by electronic funds transfer to the bank account identified on the ASAP Bank Information Form that you filed with the U.S. Department of Treasury.

ARTICLE VII - INCREMENTAL FUNDING AND MAXIMUM OBLIGATION

This award is funded on an incremental basis. The maximum obligation of the DOE is limited to the amount shown in Block 16.b.(3) "CUMULATIVE DOE OBLIGATIONS Project Period to Date" on the Notice of Financial Assistance Award. You are not obligated to continue performance of the project beyond the total amount shown in Block 16.b.(3) and your pro rata share of the project costs, if cost sharing is required. Additional funding is contingent upon the availability of appropriated funds and substantial progress towards meeting the objectives of the award.

ARTICLE VIII - REBUDGETING AND RECOVERY OF INDIRECT COSTS

a. If actual allowable indirect costs are less than those budgeted and funded under the award, you may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, you must refund the difference.

b. Participants are expected to manage their indirect costs. DOE will not amend an award solely to provide additional funds for changes in indirect cost rates (See "Incremental Funding and Maximum Obligation article). DOE recognizes that the inability to obtain full reimbursement for indirect costs means the Participant must absorb the underrecovery. Such underrecovery may be allocated as part of the organization's required cost sharing.

ARTICLE IX USE OF PROGRAM INCOME (ALTERNATE 1)

If you earn program income during the project period as a result of this award, you may add the program income to the funds committed to the award and use it to further eligible project objectives.

ARTICLE X - REPORTING REQUIREMENTS

a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

b. Dissemination of scientific/technical reports. Scientific/technical reports submitted under this award will be disseminated on the Internet via the DOE Information Bridge (www.osti.gov/bridge), unless the report contains patentable material, protected data or SBIR/STTR data. In addition, these reports must not contain any limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release. Citations for journal articles produced under the award will appear on the DOE Energy Citations Database (www.osti.gov/energycitations).

ARTICLE XI- PUBLICATIONS (OCT 2004)

a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.

b. An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

> *Acknowledgment*: "This material is based upon work supported by the Department of Energy [National Nuclear Security Administration] [add name(s) of other agencies, if applicable] under Award Number(s) [enter the award number(s)]."
>
> *Disclaimer*: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process

disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

ARTICLE XII - FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS

You must obtain any required permits and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

ATRICLE XIII - INTELLECTUAL PROPERTY PROVISIONS AND CONTACT INFORMATION (http://www.gc.doe.gov/techtrans/sipp_matrix.html)

a. Participants that are institutions of higher education, hospitals, and other non-profit organizations are subject to the intellectual property requirement at 10 CFR 600.136.

b. Questions regarding intellectual property matters should be referred to the Patent Counsel designated as the service provider for the DOE office that issued the award. The IP Service Providers List is found at http://www.gc.doe.gov/gcmain.html. Click on Intellectual Property and Laboratory Partnering, and then click on IP Service Providers List.

ATRICLE XIV - NATIONAL SECURITY: CLASSIFIABLE RESULTS ORIGINATING UNDER AN AWARD

a. This award is intended for unclassified, publicly releasable research. You will not be granted access to classified information. DOE does not expect that the results of the research project will involve classified information. Under certain circumstances, however, a classification review of information originated under the award may be required. The Department may review research work generated under this award at any time to determine if it requires classification.

b. Executive Order 12958 (60 Fed. Reg. 19,825 (1995)) states that basic scientific research information not clearly related to the national security shall not be classified. Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to national security or cryptology may require classification. If you originate information during the course of this award that you believe requires classification, you must promptly:

1. Notify the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award;

2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P.O. Box A; Germantown, MD 20875-0963, for classification review.

3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 30 days after receipt by the Director, Office of Classification and Information Control

c. If you originate information concerning the production or utilization of special nuclear material (i.e., plutonium, uranium enriched in the isotope 233 or 235, and any other material so determined under section 51 of the Atomic Energy Act) or nuclear energy, you must:

1. Notify the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award.

2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P. O. Box A; Germantown, MD 20875-0963 for classification review within 180 days of the date the Participant first discovers or first has reason to believe that the information is useful in such production or utilization.

3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 90 days after receipt by the Director, Office of Classification and Information Control.

d. If DOE determines any of the information requires classification, you agree that the Government may terminate the award by mutual agreement in accordance with 10 CFR 600.25(d). All material deemed to be classified must be forwarded to the DOE, in a manner specified by DOE.

e. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

ARTICLE XV- LOBBYING RESTRICTIONS

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

ARTICLE XVI - NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

ARTICLE XVII - CONTRACTING OFFICER'S TECHNICAL PROJECT OFFICER

The DOE Project Officer identified in Block 11 of the DOE F4600. 1, "Notice of Financial Assistance Award," is the DOE Contracting Officer's technical representative. The Project Officer shall be the Participant's point of contact on technical matters, subject to the "Technical Direction" provision included herein.

ARTICLE XVIII - PERIOD OF PERFORMANCE

The period of performance of this Agreement is five years (December 1, 2006 through November 30, 2011) unless terminated or extended by mutual agreement of the parties.

ARTICLE XXIX - EVALUATION, ANALYSIS, ASSISTANCE, AND APPROVAL

Evaluation, analysis, assistance, and approval required by this Agreement shall be accomplished at the DOE's Savannah River Operations Office, Aiken, South Carolina, by the Contracting Officer or his duly authorized representatives.

ARTICLE XX - KEY PERSONNEL

Since the decision to fund this project is based, to a significant extent, on the qualifications and level of participation of the key personnel listed below, a change of key personnel or of the level of effort of the key personnel is considered a change in the project. Prior to diverting any of the specified individuals to other programs, the Participant shall notify the Contracting Officer immediately.

Paul M. Bertsch Carl L. Strojan

ARTICLE XXI - LIABILITIES AND LOSSES

DOE, by issuing this cooperative agreement, assumes no liability with respect to any damages or losses as arising out of any activities undertaken with the financial support of this award. Neither does the Participant, by receipt of such financial award, assume any liabilities for damages or losses as which would not otherwise attach to any activities of the Participant.

ARTICLE XXII - PROPERTY MANAGEMENT AND DISPOSITION (OWNERSHIP OF PROPERTY) Notwithstanding the requirements of 10 CFR 600.130, the following provisions apply to this agreement.

A. Personal Property.

1. The Participant shall establish written procedures, for DOE-SR approval, to insure adequate safeguards are in place to prevent loss, damage, theft or the unauthorized export of Government-owned property.

2. Title to Equipment.

   (a) Title to all currently accountable equipment purchased or fabricated by UGARF under predecessor Cooperative Agreement No. DE-FC09-96SR18546 and identified in Attachment D, with an acquisition cost greater than $1,000 per item shall remain vested in the Government and shall be considered federally-owned property.

   (b) Title to all equipment purchased or fabricated by UGARF under subject Cooperative Agreement from the date of award acquired by the Participant with Federal funds with an acquisition cost greater than $5,000 per item shall vest in the Participant, subject to conditions cited under 10 CFR 600.134 Equipment.

3. Except for items falling within the realm of B.1 below, title to any equipment or supplies (except for firearms and ammunition, which title shall remain with the Government), with an acquisition cost less than $5,000 acquired by the Participant under this agreement with operating funds, the primary purpose of which is to conduct scientific research, shall vest in the Participant without further obligation or accountability of the U.S. Government. DOE retains the right to transfer ownership of any item of equipment having a unit acquisition cost of $5,000 or more in accordance with the provisions of 10 CFR 600.133(b). This exemption is derived from Public Law 95-224, The Federal Grant and Cooperative Agreement Act of 1977, as amended (31 U.S.C. 6306). Unused supplies exceeding $5,000 in aggregate current fair market value shall be accounted for at project closeout. In this case, DOE shall be compensated in an amount computed in accordance with section 600.134(g) if the supplies are retained for use on non-Federal activities.

4. The Participant is authorized to acquire excess property in accordance with Federal Property Management Regulation 101-43.313. Participant shall be required to screen for available excess property as their first source of procurement prior to actual purchases.

5. Trade-in of Government on Property under predecessor Cooperative Agreement No. DE-FC09-96SR18546, provided as Attachment D, to subject Agreement – Trade-in of property for new or used equipment shall be coordinated with the Government, in accordance with governing regulation, and local DOE-SR policy as applicable for subject purchase.

6. Exempt Property Exceeding $5,000.00 – UGARF shall ensure the Federal Government, State Government, or other entity providing funds for purchase of exempt property value exceeding $5,000.00, without further obligation to the Government is incorporated in the Annual Budget Year (BY) Plan. The terms and conditions of 600.133(b) will apply to property specified as exempt for each BY, and agreed to by DOE-SR and the participant. The terms and conditions of 600.134 will apply to all other property exceeding $5,000.00 not agreed to for the Budget Year, or special instructions shall be incorporated for said property.

B. Real Property

1. Title to the land upon which the said Savannah River Ecology Laboratory is located, and to any additional land which may be assigned thereto, shall remain vested with the Government. The Department of Energy will continue to allow UGARF to use the DOE facilities as listed in Attachment D. Title to the Savannah River Ecology Laboratory (SREL) facilities and all equipment that is subsequently attached so as to be structurally incorporated therein and made an integral and component part thereof shall be vested in the Government. Notwithstanding the provisions of 10 CFR 600.132, the Participant shall not be entitled to any compensation as a result of the Government retaining title to all the aforementioned equipment and facilities whether such events occurred and/or will occur under predecessor Contract No. DE-FC09-96SR18546 and/or under this agreement.

2. With regards to the permit agreement dated October 13, 1993, filed with the R.M.C. Aiken County in volume 1424 page 26, this permit and the terms and conditions stated in the permit, will continue with the signing of this agreement. The Department of Energy retains the right to have all buildings, foundations, concrete pads, and improvements made on the premises at the termination of the permit deeded to the Department. Notwithstanding the provisions of 10 CFR 600.132(C)(3), the Participant shall not be entitled to any compensation as a result of the Government retaining this right to title of all buildings, foundations, concrete pads and improvements that have been or are subsequently attached so as to be structurally incorporated therein and made an integral and component part thereof, whether such event occurred and/or will occur under the predecessor Contract No. DE-FC09-96SR18546 and/or under this agreement.

3. The Participant hereby grants to the Government reasonable use and occupancy of the Conference Center provided UGARF's scheduling permits.

4. Real property accounting via the Facility Information Management System and the Financial Information System for all real property occupied or used by UGARF will be maintained by SR Lead M&O Contractor.

C. Acquisition of Real Property

1. Notwithstanding any other provision of the cooperative agreement, the prior approval of a DOE Certified Real Estate Specialist and the Contracting Officer shall be obtained when, in performance of this cooperative agreement, the Participant acquires or proposes to acquire use of real property by:

   (a) Purchase on the Government's behalf or in the Participant's own name, with title eventually vesting in the Government.

   (b) Lease and the Government assumes liability for, or will otherwise pay the obligation as a reimbursable cost.

   (c) Acquisition of temporary interest through easement, license or permit, and the Government funds any of the temporary interest.

2. All proposed real property acquisitions shall be prepared in accordance with guidance provided by a DOE-SR Realty Specialist through the Contracting Officer.

3. Notwithstanding the provisions of 10 CFR 600.132, title to any such real property shall vest in the Government and shall be considered Federally-owned property.

4. The substance of this clause, including this paragraph, shall be included in any subaward or subaward occasioned by this cooperative agreement.

ARTICLE XXIII - STATEMENT OF FEDERAL STEWARDSHIP

DOE will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to insure that the award objectives have been accomplished.

ARTICLE XXIV - SITE VISITS

DOE authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. You must provide, and must require your subawardees to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work.

ARTICLE XXV - ENVIRONMENTAL, SAFETY AND HEALTH

1. The Participant shall comply with requirements promulgated by Federal, state and local laws, statutes and regulations (unless formal relief to the regulation has been granted by the appropriate regulatory authority).

2. The Participant shall operate in accordance with the SREL Safety Manual and the SREL Environmental Management Plan which implements the Department's approved safety standards established for SREL, see Appendix F.

ARTICLE XXVI - DESIGN AND CONSTRUCTION

1. The Participant shall be responsible for the management and engineering services for the planning, design, repair, modification, or upgrade of existing facilities or construction of new facilities, not to include line item projects, as required to support the Participant's scope of work as approved by the Contracting Officer and appropriate DOE program personnel.

2. The design and construction must comply with commercial codes and standards as well as Site, state, and Federal requirements, laws, and regulations.

3. DOE reserves the right to oversee the design and construction of any project as well as to require the necessary reports to ascertain project status.

ARTICLE XXVII- PUBLIC RELEASE OF INFORMATION

1. The Participant shall be responsible for developing, planning and coordinating proactive approaches to dissemination of timely information regarding UGARF activities onsite or, as appropriate, offsite. This will be accomplished through coordination with DOE. The responsibility will be carried out in such a manner that the public, whether it is the news media, citizen's groups, private citizens or local, state or Federal government officials, has a clear understanding of UGARF activities at the Site.

2. The Participant shall be responsible for following established DOE procedures for clearances on oral, written and audio/visual information material prepared for public use other than scientific or technical information.

ARTICLE XXVIII - CONTROL OF NUCLEAR MATERIALS

The scope of this agreement does not authorize the Participant to receive, process, or store accountable nuclear materials as defined by DOE Manual 470.4-6. If task are identified which require the use of such materials, the Participant will, at the earliest opportunity, notify the Contracting Officer. The Contracting Officer will initiate modifications to this Agreement based on consultation with the DOE-SR Office of Safeguards, Security, and Emergency Services.

ARTICLE XXIX – SECURITY

The Participant agrees to safeguard all unclassified controlled information, and other DOE property. The Participant shall, in accordance with DOE security regulations and requirements, be responsible for safeguarding all unclassified controlled information (UCI), and protecting against sabotage, espionage, loss and theft, UCI and material in the Participant's possession in connection with the performance of work under this agreement. The participant shall comply with the Federal Information Security Management Act (FISMA), The Office of Management & Budget (OMB), and National Institute of Standards and Technology (NIST) cyber security requirements. Except as otherwise expressly provided under this agreement, the Participant shall, upon completion or termination of this agreement, transmit to DOE any UCI in the possession of the Participant or any person under the Participant's control in connection with the performance of this agreement. If retention by the Participant of any UCI is required after the completion or termination of the agreement and such retention is approved by the Contracting officer, the Participant shall complete a certificate of possession to be furnished to DOE specifying the UCI to be retained, the conditions governing the retention of the matter, and the period of retention, if known. If the retention is approved by the Contracting officer, the security provisions of the agreement will continue to be applicable to the matter retained. Special nuclear material will not be retained after the completion or termination of the agreement.

Export Control – The Participant will comply with all U.S. export regulations and SR Export control policy as it applies to the transfer of DOE property offsite or overseas, the use of DOE equipment by foreign nationals and 0064 to the transfer of nonpublic technical data, which is not intended to be published to foreign nationals at SRS or in or outside the United States.

ARTICLE XXX – INTELLECTUAL PROPERTY

1 All right and title to UGARF Intellectual Property shall belong to UGARF and shall be subject to the terms and conditions of this Agreement.

2 All right and title to DOE Intellectual Property shall belong to DOE and shall not be subject to the terms and conditions of this Agreement.

3 All right and title to Joint Intellectual Property shall belong jointly to UGARF and DOE. UGARF and DOE shall agree on the procedure to be used for the protection of Joint Intellectual Property.

4 UGARF shall promptly and fully disclose to DOE any UGARF and/or Joint Intellectual Property. Within ninety (90) days of such disclosure, DOE shall notify UGARF in writing whether DOE wants to exercise its option to obtain a license, and, if it does so elect, DOE shall designate in such notice the countries in which it desires for UGARF to pursue such protection for the Intellectual Property.

5 If DOE notifies UGARF within said ninety (90) day period that it wants UGARF to pursue protection for the UGARF Intellectual Property, UGARF shall promptly prepare, file, and prosecute any U.S. or foreign applications requested by DOE to be filed to protect the UGARF Intellectual Property. DOE shall bear all costs incurred in connection with such preparation, filing and prosecution and the maintenance of U.S. and foreign application(s). DOE shall cooperate with UGARF to assure that such application(s) will cover, to the best of DOE's knowledge, all items of commercial interest and importance. UGARF shall be primarily responsible for making decisions regarding the scope and content of such application(s) and the prosecution thereof. DOE shall be given an opportunity to review and comment upon such application(s). UGARF shall keep DOE advised as to all developments with respect to such application(s) and shall promptly supply DOE with copies of all papers received and filed in connection with the prosecution thereof in sufficient time for DOE to comment thereon.

6 If DOE notifies UGARF within said ninety (90) day period, then DOE shall have eight (8) months after the date of filing in the United States of an application for protection of the UGARF Intellectual Property in which to designate in writing to UGARF countries which: (i) are signatories to the Patent Cooperation Treaty and (ii) were not designated in said notice in which DOE desires UGARF to pursue protection for the UGARF Intellectual Property. UGARF shall be free to pursue, at UGARF's cost, protection for the UGARF Intellectual Property in any country that DOE has not designated.

7 If DOE does notify UGARF within said ninety (90) day period, but later decides that it no longer wants to pursue protection for the UGARF Intellectual Property in any country or in a specific country, then UGARF shall be free to pursue, at UGARF's cost, protection for the UGARF Intellectual Property in the countries in which DOE no longer wants to pursue protection for the UGARF Intellectual Property.

8 DOE does not notify UGARF within said ninety (90) day period, then UGARF shall be free to pursue protection for the UGARF Intellectual Property in any and all countries.

ARTICLE XXXI– GRANT OF RIGHTS

Subject to DOE: (i) informing UGARF that it wants to acquire an exclusive license, and (ii) complying with all of its obligations under this Agreement, UGARF shall grant DOE an option to acquire an exclusive license to use, manufacture, and sell the UGARF and/or Joint Intellectual Property. The period of DOE's Option shall commence on the date Intellectual Property is disclosed and shall terminate ninety (90) days after the date of disclosure. The license shall require DOE to defend, hold harmless, and indemnify UGARF against all claims or damages arising out of the commercial exploitation of any UGARF Intellectual Property or Joint Intellectual Property. The license agreement shall include: (i) reasonable royalty rates in accordance with industry standards and (ii) reasonable terms of exclusivity including, but not limited to, the retention of a license by UGARF to use the UGARF and Joint Intellectual Property for research and educational purposes. The license shall further include terms and conditions typically found in license agreements entered into between universities and companies and involving similar Intellectual Property. All such terms and conditions shall be negotiated in good faith by UGARF and DOE.

ARTICLE XXXII – LIMITED WARRANTY

UGARF represents and warrants that it has the right and authority to enter into this Agreement and that neither the execution of this Agreement nor the performance of its obligations hereunder will constitute a breach of the terms and provisions of any other agreement to which UGARF is a party. UGARF makes no representations whatsoever that UGARF Intellectual Property or Joint Intellectual Property may be exploited by DOE, its subsidiaries or affiliates, pursuant to any license granted to DOE under Article 8 hereof, without infringing other patents.

ARTICLE XXXIII - RELATIONSHIP WITH SR CONTRACTORS

1. The Participant shall provide and receive assistance from the SR Lead Contractor and its subcontractors as mutually agreed to by DOE and UGARF.

2. The Participant shall develop and implement with DOE input and concurrence Memorandums of Understanding with the SR Lead Contractor and other contractors.

3. The SREL will enter into a partnership agreement with the Savannah River National Laboratory (SRNL). The partnership agreement with SRNL will seek to provide opportunities to utilize SREL's scientific expertise and environmental research knowledge.

ARTICLE XXXIV - NATIONAL POLICY ASSURANCES (MAY 2006)

To the extent that a term does not apply to a particular type of activity or award, it is self-deleting.

I. Nondiscrimination Policies

You must comply with applicable provisions of the following national policies prohibiting discrimination:

1. On the basis of race, color, or national origin, in Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.), as implemented by DOE regulations at 10 CFR part 1040;

2. On the basis of sex or blindness, in Title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.), as implemented by DOE regulations at 10 CFR parts 1041 and 1042;

3. On the basis of age, in the Age Discrimination Act of 1975 (42 U.S.C. 6101 et seq.), as implemented by Department of Health and Human Services regulations at 45 CFR part 90 and DOE regulations at 10 CFR part 1040;

4. On the basis of disability, in Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), as implemented by Department of Justice regulations at 28 CFR part 41 and DOE regulations at 10 CFR part 1041;

5. On the basis of race, color, national origin, religion, disability, familial status, and sex under Title VIII of the Civil Rights Act (42 U.S.C. 3601 et seq.) as implemented by the Department of Housing and Urban Development at 24 CFR part 100; and

6. On the basis of disability in the Architectural Barriers Act of 1968 (42 U.S.C. 4151 et seq.) for the design, construction, and alteration of buildings and facilities financed with Federal funds.

II. Environmental Policies

You must:

1. Comply with applicable provisions of the Clean Air Act (42 U.S.C. 7401, et. seq.) and Clean Water Act (33 U.S.C. 1251, et. seq.), as implemented by Executive Order 11738 [3 CFR, 1971-1975 Comp., p. 799] and Environmental Protection Agency rules at 40 CFR part 32, Subpart J.
2. Immediately identify to us, as the awarding agency, any potential impact that you find this award may have on:
    a. The quality of the human environment, including wetlands, and provide any help we may need to comply with the National Environmental Policy Act (NEPA, at 42 U.S.C. 4321 et. seq.) and assist us to prepare Environmental Impact Statements or other environmental documentation. In such cases, you may take no action that will have an adverse environmental impact (e.g., physical

disturbance of a site such as breaking of ground) or limit the choice of reasonable alternatives until we provide written notification of Federal compliance with NEPA, as implemented by DOE at 10 CFR part 1021.

b. Flood-prone areas, and provide any help we may need to comply with the National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973 (42 U.S.C. 4001 et. seq.), which require flood insurance, when available, for Federally assisted construction or acquisition in flood-prone areas, as implemented by DOE at 10 CFR part 1022.

c. Use of land and water resources of coastal zones, and provide any help we may need to comply with the Coastal Zone Management Act of 1972 (16 U.S.C. 1451, et. seq.).

d. Coastal barriers along the Atlantic and Gulf coasts and Great Lakes' shores, and provide help we may need to comply with the Coastal Barriers Resource Act (16 U.S.C. 3501 et. seq.), concerning preservation of barrier resources.

e. Any existing or proposed component of the National Wild and Scenic Rivers system, and provide any help we may need to comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.).

f. Underground sources of drinking water in areas that have an aquifer that is the sole or principal drinking water source, and provide any help we may need to comply with the Safe Drinking Water Act (42 U.S.C. 300h-3).

3. Comply with applicable provisions of the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846), as implemented by the Department of Housing and Urban Development at 24 CFR part 35. The requirements concern lead-based paint in housing owned by the Federal Government or receiving Federal assistance.

4. Comply with section 6002 of the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6962), and implementing regulations of the Environmental Protection Agency, 40 CFR Part 247, which require the purchase of recycled products by States or political subdivision of States.

III. Live Organisms

1. **Human research subjects.** You must protect the rights and welfare of individuals that participate as human subjects in research under this award in accordance with the Common Federal Policy for the Protection of Human Subjects (45 CFR part 46), as implemented by DOE at 10 CFR part 745.

2. **Animals and plants.**

   a. You must comply with applicable provisions of Department of Agriculture rules at 9 CFR parts 1-4 that implement the Laboratory

Animal Welfare Act of 1966 (7 U.S.C. 2131-2156) and provide for humane transportation, handling, care, and treatment of animals used in research, experimentation, or testing under this award.

b. You must follow the guidelines in the National Academy of Sciences (NAS) Publication "Guide for the Care and Use of Laboratory Animals" (1996, which may be found currently at http://www.nap.edu/readingroom/books/labrats/) and comply with the Public Health Service Policy and Government principles Regarding the Care and use of animals (included as Appendix D to the NAS Guide).

c. You must immediately identify to us, as the awarding agency, any potential impact that you find this award may have on endangered species, as defined by the Endangered Species Act of 1973, as amended ("the Act," 16 U.S.C. 1531-1543), and implementing regulations of the Departments of the Interior (50 CFR parts 10-24) and Commerce (50 CFR parts 217-227). You also must provide any help we may need to comply with 16 U.S.C. 1536(a)(2). This is not in lieu of responsibilities you have to comply with provisions of the Act that apply directly to you as a U.S. entity, independent of receiving this award.

IV. Other National Policies

1. **Debarment and suspension.** You must comply with requirements regarding debarment and suspension in Subpart C of 2 CFR part 180, as adopted by DOE at 10 CFR part 606.

2. **Drug-free workplace.** You must comply with drug-free workplace requirements in Subpart B of 10 CFR part 607, which implements sec. 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701, et seq.)

3. **Lobbying.**

a. You must comply with the restrictions on lobbying in 31 U.S.C. 1352, as implemented by DOE at 10 CFR part 601, and submit all disclosures required by that statute and regulation.

b. If you are a nonprofit organization described in section 501(c)(4) of title 26, United States Code (the Internal Revenue Code of 1968), you may not engage in lobbying activities as defined in the Lobbying Disclosure Act of 1995 (2 U.S.C., Chapter 26). If we determine that you have engaged in lobbying activities, we will cease all payments to you under this and other awards and terminate the awards unilaterally for material failure to comply with the award terms and conditions. By submitting an application and accepting funds under this agreement, you assure that you are not an organization described in section 501(c)(4) that has engaged in any lobbying activities described in the Lobbying Disclosure Act of 1995 (2 U.S.C. 1611).

c. You must comply with the prohibition in 18 U.S.C. 1913 on the use of Federal funds, absent express Congressional authorization, to pay directly or indirectly for any service, advertisement or other written matter, telephone communication, or other device intended to influence at any time a Member of Congress or official of any government concerning any legislation, law, policy, appropriation, or ratification.

4. **Officials not to benefit.** You must comply with the requirement that no member of Congress shall be admitted to any share or part of this agreement, or to any benefit arising from it, in accordance with 41 U.S.C. 22.

5. **Hatch Act.** If applicable, you must comply with the provisions of the Hatch Act (5 U.S.C. 1501-1508 and 7324-7326), as implemented by the Office of Personnel Management at 5 CFR part 151, which limits political activity of employees or officers of State or local governments whose employment is connected to an activity financed in whole or part with Federal funds.

6. **Native American graves protection and repatriation.** If you control or possess Native American remains and associated funerary objects, you must comply with the requirements of 43 CFR part 10, the Department of the Interior implementation of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C., chapter 32).

7. **Fly America Act.** You must comply with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118), commonly referred to as the "Fly America Act," and implementing regulations at 41 CFR 301-10.131 through 301-10.143. The law and regulations require air transport of people or property to, from, between or within a country other than the United States, the cost of which is supported under this award, to be performed by or under a cost-sharing arrangement with a U.S. flag carrier, if service is available.

8. **Use of United States-flag vessels.**

   a. Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)), at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds under this award, and which may be transported by ocean vessel, must be transported on privately owned United States-flag commercial vessels, if available.

   b. Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 9.a of this section shall be furnished to both our award administrator (through you in the case of your contractor's bill-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

9. **Research misconduct.** You must comply with the government-wide policy on research misconduct issued by the Office of Science and Technology Policy (available in the Federal Register at 65 FR 76260, December 6, 2000, or on the Internet at www.ostp.gov), as implemented by DOE at 10 CFR part 733 and 10 CFR 600.31.

10. **Requirements for an Institution of Higher Education Concerning Military recruiters and Reserve Officers Training Corps (ROTC).**

    a. As a condition for receiving funds under an award by the National Nuclear Security Administration of the Department of Energy, you agree that you are not an institution of higher education that has a policy or practice placing any of the restrictions specified in 10 U.S.C. 983. as implemented by 32 CFR part 216, on:

       i. Maintenance, establishment, or operation of Senior ROTC units, or student participation in those units; or

       ii. Military recruiters' access to campuses, students on campuses, or information about students.

    b. If you are determined, using the procedures in 32 CFR part 216, to be such an institution of higher education during the period of performance of this award, we:

       i. Will cease all payments to you of funds under this award and all other awards subject to the requirements in 32 CFR part 216; and

       ii. May suspend or terminate those awards unilaterally for material failure to comply with the award terms and conditions.

11. **Historic preservation.** You must identify to us any:

    a. Any property listed or eligible for listing on the National Register of Historic Places that will be affected by this award, and provide any help we may need, with respect to this award, to comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as implemented by the Advisory Council on Historic Preservation regulations at 36 CFR part 800 and Executive Order 11593, "Identification and Protection of Historic Properties," [3 CFR, 1971-1975 Comp., p. 559].

    b. Potential under this award for irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, and provide any help we may need, with respect to this award, to comply with the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1, et seq.).

12. **Relocation and real property acquisition.** You must comply with applicable provisions of 49 CFR part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601, et seq.) and

provides for fair and equitable treatment of persons displaced by federally assisted programs or persons whose property is acquired as a result of such programs.

13. **Confidentiality of patient records.** You must keep confidential any records that you maintain of the identity, diagnosis, prognosis, or treatment of any patient in connection with any program or activity relating to substance abuse education, prevention, training, treatment, or rehabilitation that is assisted directly or indirectly under this award, in accordance with 42 U.S.C. 290dd-2.
14. **Constitution Day.** You must comply with Public Law 108-447, Div. J, Title I, Sec. 111 (36 U.S.C. 106 note), which requires each educational institution receiving Federal funds in a Federal fiscal year to hold an educational program on the United States Constitution on September 17th during that year for the students served by the educational institution.

V. National Policy Requirements for Subawards.

Participant responsibility. You must include in any subaward you make under this award the requirements of the national policy requirements in Sections I through IV of this document that apply, based on the type of subawardee organization and situation.

In addition National Policy Requirements the provisions listed below shall continue to be adhered to:

(1) Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 276c)
(2) Davis-Bacon, as amended (40 U.S.C. 276a to a-7)
(3) Contract Work Hour and Safety Standards Act (40 U.S.C. 327-333)
(4) Rights to Inventions Made under a Contract or Agreement

ARTICLE XXXV - DOE DIRECTIVES

In recognition that this cooperative agreement is being performed on a Government site and utilizing Government real property, the Participant agrees to comply with all requirements promulgated by Federal, state and local laws, statutes, and regulations unless formal relief to the regulation has been granted by the appropriate regulatory authority. In addition, the Participant agrees to develop and maintain a list of DOE directives with which compliance will be maintained. The initial list and any subsequent changes will be approved by the DOE Contracting Officer.

The Government expects the Participant to be cost-effective and recognizes that industry/university standards or directives may provide an alternate means of achieving the goals of DOE directives. Therefore, the Participant is encouraged to obtain DOE approval for exemptions/deviations to DOE directives and requirements in order to apply industry/university standards and practices or to develop its own innovative practices/procedures to reduce costs and improve efficiency. If an exemption/deviation process is not specifically provided by a

DOE directive, the Participant shall obtain DOE approval to deviate from the directive.

New or revised DOE directives shall be forwarded to the Participant by the Contracting Officer or designee via a formal Contract Administration Notice (CAN). The Participant shall have 10 calendar days to respond to DOE with a determination of applicability. If DOE and the Participant are in agreement that the list of DOE directives needs revision, then the Participant shall revise and submit the list to DOE for approval within 20 calendar days of that agreement. The Participant shall implement the revised list of DOE directives within 90 calendar days of DOE approval. Additional time may be requested if necessary.

ARTICLE XXXVI - PRECEDENCE OF REQUIREMENTS

Unless otherwise specifically stated in a special provision these provisions are not intended to take precedence over any other requirements found in regulations, DOE Orders, etc., and do not take precedence over requirements of statutory law. Any apparent contradiction of statutory law stated herein should be presumed to be in error until the Participant has sought and received clarification from the Contracting Officer.

ARTICLE XXXVII- AGREEMENT ON BUY AMERICAN ACT REQUIREMENTS

1. In accepting this award, the Participant agrees to comply with sections 2 through 4 of the Act of March 3, 1993 (41 U.S.C. l0a-10c, popularly known as the "Buy American Act"). The Participant should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

2. It is the sense of the Congress of the United States that only American-made equipment and products should be purchased with financial assistance provided under this award.

ARTICLE XXXVIII - BONDING AND INSURANCE

The Participant shall comply with the bonding and insurance requirements specified in 10 CFR 600.148(c).

ARTICLE XXXIX - APPENDICES

The following Appendices are attached hereto and made a part of this Agreement:

Appendix A - Project Description

Appendix B – Budget Plan

Appendix C – Reports and Plans

Appendix D - Government-Owned Property

Appendix E – Government-Owned Buildings Assigned to SREL

Appendix F – SREL Safety Manual

APPENDIX A

Cooperative Agreement No. DE-FC09-07SR22506
University of Georgia Research Foundation

PROJECT DESCRIPTION
Savannah River Ecology Laboratory (SREL) Program

I. RESPONSIBILITIES OF THE PARTICIPANT

The primary purpose of this agreement is to provide the public with an independent evaluation of the ecological effects of Savannah River Site (SRS) operations on the environment through a program of ecological research, education and outreach. This program of environmental research emphasizes expanding the understanding of ecological processes and principles that are needed to address environmental problems in the Southeastern coastal plain.

The secondary purpose of this effort is to evaluate ecological resources and apply ecological science to understanding SRS environmental problems. The independent evaluation will be used to validate characterizations performed by other Site contractors and subcontractors. It is in the best interests of the public to be provided with an independent academic assessment of the impact of Site operations on the environment.

This is a continuation of a long-term program of research in basic and applied ecology as well as research on the fate of various contaminants and the effects of other stressors on biological communities. In addition to the research, SREL provides environmental education and training programs, which are supervised by internationally recognized ecologists, for students and faculty members from various colleges and universities around the nation. A function of the laboratory is to conduct environmental studies relevant to SRS operations and DOE programs. The work performed by SREL is significant to the public and DOE as it provides a further understanding of the environmental effects of SRS operations.

A. SREL Program

1. SREL will assess the impact of Site operations on the environment, and will continue to provide the public and DOE with an independent view of the environmental management of the SRS.

2. SREL will continue basic and applied environmental research with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of Site activities, new missions, and land use practices on the environment.

3. SREL will use the information collected in the environmental research to develop and test hypotheses that will contribute to the scientific foundation necessary to conduct meaningful ecological risk assessments and to understand the environmental consequences of energy technologies, remediation efforts, and other SRS activities.

4. SREL public outreach and communication programs will focus on the SRS environment and SREL ecological research to increase the public's understanding of scientific issues affecting the Site and to increase general ecological awareness.

5. SREL will maintain ecological data bases for use by the public, SRS, governmental, academic, and private organizations. These databases incorporate more than 50 years of data collection on the SRS and provide a resource for understanding changes impacting ecosystems on the SRS and elsewhere in the southeastern United States.

6. SREL will serve as the point-of-contact for the "DOE Research Set-Aside" areas that are protected from Site impacts so that they are available for environmental research and can serve to establish representative standards for comparison to impacted areas on the SRS. Currently SRS has 30 "set-aside" areas. SREL will also continue to promote the role of the SRS as a National Environmental Research Park.

7. Through its research and public outreach programs, SREL will increase scientific understanding in the general areas of environmental characterization, ecological risk assessment, and environmental remediation and restoration. This will require research on topics such as terrestrial and aquatic ecology, environmental chemistry, molecular ecology and genetics, microbial ecology, radiation ecology, and ecotoxicology. SREL will also continue to communicate and coordinate with SRS contractors and the public on these issues.

8. SREL will continue to serve as a regional resource for scientific expertise and environmental research. SREL staff scientists will continue to provide special technical expertise to other Site contractors, area stakeholders, other researchers, and the public. SREL will also continue to collaborate with scientists from other institutions.

9. SREL scientists will work closely with SRS personnel to assist DOE and other SRS contractors in making wise and informed decisions concerning land and facilities management. SREL will continue to publish its scientific findings in peer-reviewed scientific journals to aid the public and to assist DOE in making policy decisions by providing a basis of independent, verifiable science.

B. University/Laboratory Cooperative Programs

SREL will provide stipend support to college undergraduates, graduate students, and visiting faculty investigators to conduct research on the Savannah River Site in association with ongoing environmental research studies. The objective of the program will be to provide participants, including minority students and Historically Black Colleges and Universities, with an opportunity to pursue ecological research and training under the direction and supervision of SREL scientific staff members.

C. The Participant will operate and maintain the SREL facilities on the SRS to efficiently and successfully perform the research, education and outreach programs described in this project description.

D. Construction of facilities.

UGARF will be responsible for management and engineering services for the planning, design and construction of approved projects as may be required to repair, modify or upgrade existing facilities or construct new facilities, not to include line item projects, necessary to support the UGARF scope of work, as approved by the Contracting Officer and appropriate DOE program personnel.

II. SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE PARTICIPANT

Substantial involvement is anticipated between UGARF and DOE during the period of performance of this cooperative agreement because DOE will share in the responsibilities for selecting research to be performed, long-range planning, review of scientific progress, defining interfaces between UGARF and other activities on the SRS, and project direction. The SREL complex is composed of U.S. Government-titled buildings and equipment, and DOE will continue to provide the UGARF with facilities and equipment on the SRS for this program.

DOE ROLES AND RESPONSIBILITIES: The Project Officer or his designee shall coordinate the day-to-day technical and administrative activities with the Participant. DOE will interact to assure that plans developed by UGARF to accomplish its program objectives are maintained to appropriately protect Site security and ES&H requirements. DOE will monitor the participant's performance through reporting requirements established in the agreement. Additionally, DOE will provide consultation, technical coordination and management surveillance. Finally, DOE will collaborate with the participant in funding and rebudgeting decisions.

The substantial involvement by DOE under this cooperative agreement will remain for the term of the cooperative agreement award, unless otherwise amended.

APPENDIX B

Budget Plan
For
Savannah River Ecology Laboratory Program
(Budget Period : October 1, 2006 through September 30, 2007)

Cooperative Agreement No. DE-FC09-96SR18546
University Of Georgia Research Foundation, Inc.

CATEGORY	DOE SHARE	UGARF SHARE
Personnel Salaries	$3,000,000	$719,352
Staff Benefits	$740,000	$177,509
Travel	$70,000	$ 0
Equipment	$50,000	$ 0
Supplies	$485,000	$ 0
Subcontracts	$50,000	$ 0
Student Aid	$5,000	$ 0
Other Direct Costs	$92,040	$ 0
Total Direct Costs	$4,492,040	$896,861
Indirect Costs	$507,960	$103,139
TOTAL APPROVED BUDGET	**$5,000,000**	**$1,000,000**

BUDGET PLAN FOR THE SAVANNAH RIVER ECOLOGY LABORATORY

CATEGORY

1. SALARIES AND WAGES	$3,000,000	
A. Administrative & Faculty Positions	8 FTEs	$800,000
Assoc Director		$85,000 - 140,000
Admin Financial Director		$ 60,000 -110,000
Sr. Research Scientist		$75,000 - 150,000
Assoc. Research Scientist		$60,000 - 110,000
Assist. Research Scientist		$55,000 - 85,000
B. Indirect Personnel (Classified) Positions	25 FTEs	$885,000
Admin. Assoc.		$23,100 - 42,300
Admin. Assoc. I		$23,100 - 42,300
Web Develop. Assoc		$25,900 - 51,300
Admin. Specialist		$31,000 - 58,500
Envir. Safety Mgr.		$42,800 - 80,600
Bldg Services Worker		$18,500 - 33.900
Grounds Keeper II		$17,600 - 31,300
Accounting Assist. III		$21,400 - 39,300
IT Assoc Dir		$42,400 - 105,900
Budget Analyst II		$27,500 - 51,700
Admin Mgr II		$40,775 - 76,790
Facilities Mgr I		$31,800 - 60,000
Sys. Admin Assoc.		$29,100 - 70,500
Property Control Coord.		$24,900 - 46,900
Electrical Distrib. Inspector		$27,500 - 51,700
Accountant III		$31,900 - 60.000
HR Specialist I		$24,890 - 46,970
Program Specialist II		$30,000 - 54,800
HVAC- Refrig. Mechanic		$24,900- 46,900
Sc Computing Pro. Spec		$30,000 - 76,100
C. Postdoctoral Associate	3 FTEs	$90,000

D. Technical Personnel (Classified)	26 FTEs	$1,150,000

Positions	
Research Technician II	$ 20,400 - 37,400
Research Technician III	$ 24,300 - 45,700
Research Professional I	$ 28,200 - 53,000
Research Professional II	$ 33,500 - 63,000
Research Professional III	$ 39,800 - 75,000
Research Professional IV	$ 47,300 - 89,000

E. Graduate Research Assistants	5 FTEs	$75,000

2. STAFF BENEFITS $740,000

SREL has based its staff benefits costs on yearly data charged against the DOE account. Data are provided on a monthly basis from UGA. The total charges each year have been approximately 25 percent of total wages and salaries. The projected salaries in FY 2007 are $3,000,000 and the projection for the benefits is $740,000.

3. TRAVEL $70,000

This is the projection for travel costs for SREL personnel for the course of the FY to carry out administrative and research tasks described in the program plan (Appendix A). This is based on previous years' data which has been constant over the last several years. This includes a small amount of foreign travel since most travel outside the US is funded by UGA State funds or other non-DOE accounts.

4. EQUIPMENT $50,000

This is projected for funds expended on items less than $25,000 and greater than $5,000. SREL purchases very few items each year which are categorized as CE under the DOE guidelines. In past years we have had matching funds from UGA for these CE purchases. Anticipated equipment purchases in FY07 include: an autoclave ($20K), two themocyclers for ecological genetics ($40K each), and a microscope to support environmental microbiology research ($10K).

5. SUPPLIES $485,000

These costs are for expendable items purchased by SREL in the course of the work. This would include such items as chemical, computer supplies, small research instruments, etc. Costs are based on historical data and budgetary limitations.

6. SUBCONTRACTS $50,000

SREL has plans to subcontract with one university in FY2007.The contracts will be for cooperative research and will implement the terms of a Memorandum of Understanding that SREL has developed with the University of South Carolina for remediation research on the SRS.

7. STUDENT AID 1 FTE $5,000

The SREL supports graduate students conducting research in the area relevant to the DOE mission. These are either doctoral or master's level personnel who have completed all course work and are conducting full-time research towards their degree.

8. OTHER DIRECT COSTS $92,040

SREL has annually separated out the costs needed to operate general laboratory programs. These funds are non-research related and are part of the service function of the lab. These costs are projected based on prior years' records and budget needs. These costs are associated with the grounds and maintenance programs, custodial costs exclusive of salaries and benefits, safety program for SREL, computer center operation, and administrative services such as accounting, payroll, etc. The following is a detailed breakdown of these costs.

A. Maintenance orders on centralized equipment	$3,000
B. SREL seminar program	$7,000
C. Copying equipment rental	$8,040
D. Computer license fees	$5,000
E. Photographic services	$1,000
F. Publication costs	$5,000
G. Repair, replacement of fixed equipment	$18,000
H. Vehicle costs for general use (includes lease , repair and gas charges)	$5,000
I. Mailing costs (USPS, FedEX, UPS)	$4,000
J. Minor construction and renovation	$3,000
K. Computer center operation (supplies, software, & new hardware)	$26,000
L. Custodial and grounds costs	$5,000
M. Safety program costs (supplies and training)	$2,000
Sub-Total	$92,040

APPENDIX C

DOE F 4600.2 Federal Assistance Reporting Checklist (page un-numbered), continuation page to checklist, page C-2/w instructions (pages numbered 2 thru 15)

DOE F 4600.2
5-06
All Other Editions Are Obsolete

U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST AND INSTRUCTIONS

1. Identification Number:
DE-FC09-06SR22506

2. Program/Project Title:
Savannah River Ecology Laboratory (SREL) Program

3. Recipient:
University of Georgia Research Foundation, Inc.
622A Boyd Graduate Research Center
Athens, GA 30602-7411

4. Reporting Requirements:	Frequency	No. of Copies	Addressees
A. MANAGEMENT REPORTING			
☒ Progress Report	YF	Electronic Version to NETL>	FTS@NETL.DOE.GOV
☒ Special Status Report	A		
B. SCIENTIFIC/TECHNICAL REPORTING			
(Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/elink.)			
Report/Product — Form			
☒ Final Scientific/Technical Report — DOE F 241.3	FG	Electronic Version to E-link>	http://www.osti.gov/elink-2413
☐ Conference papers/proceedings* — DOE F 241.3			http://www.osti.gov/elink-2413
☐ Software/Manual — DOE F 241.4			http://www.osti.gov/estsc/241-4pre.jsp
☐ Other (see special instructions) — DOE F 241.3			
* *Scientific and technical conferences only*			
C. FINANCIAL REPORTING			
☐ SF-269, Financial Status Report			
☒ SF-269A, Financial Status Report (Short Form)	Q, FG		FTS@NETL.DOE.GOV
☐ SF-272, Federal Cash Transactions Report			
D. CLOSEOUT REPORTING			FTS@NETL.DOE.GOV
☒ Patent Certification	FG		
☒ Property Certification	FG		
☐ Other			
E. OTHER REPORTING			
☒ Annual Indirect Cost Proposal	YF		FTS@NETL.DOE.GOV
☒ Annual Inventory of Federally Owned Property, if any	YF		
☐ Other			

FREQUENCY CODES AND DUE DATES:

A - As required; see attached text for applicability.
FG - Final; within ninety (90) calendar days after the project period.
Q - Quarterly; within thirty (30) calendar days after end of the calendar quarter or portion thereof.
S - Semiannually; within thirty (30) calendar days after end of project year and half-year
YF Yearly; 90 days after the end of the project year.
YP - Yearly Property – due 15 days after period ending 9/30.

5. Special Instructions:

- The forms identified in the checklist are available at http://grants.pr.doe.gov. Alternate formats are acceptable provided the contents remain consistent with the form.
- See Federal Assistance Reporting Instruction on the following page.

(CONTINUATION OF DOE F 4600.2)

REPORTS AND PLANS

FEDERAL ASSISTANCE REPORTING CHECKLIST
UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC.

Programmatic Reporting	Frequency	Addresses
Reprints and conference papers	A	1-a, 1-b
Manuscripts, foreign travel reports, etc.	A	1-b
Budget and Financial Reporting:		
Cost Report (by Element of Expense)	M	1-a, 1-c, 1-f
Account Status Report	M	1-a, 1-c
Progress Tracking System Report	M	1-a, 1 -c
Budget Formulation Schedule/exhibits as required by the call letter	Y	1ea, a, b, c
Property:		
Annual Report of Issued Scientific Technical Information Documents	Y	1-a, 1-d, 1-e

ADDRESSES

a
DOE-SR
Christine Corbin
Contract Specialist
P.O. Box A
Aiken, SC 29802

b
DOE-SR
Mr. Dennis Ryan
Project Officer
P.O. Box A
Aiken, SC 29802

c
DOE-SR
Planning & Budget Division
P.O. Box A
Aiken, SC 29802

d
DOE-SR
Program Support &
Federal Human Resources
P.O. Box A
Aiken, SC 29802

e
U.S. Department of Energy
Office of Scientific and
Technical Information
P.O. Box 62
Oak Ridge, TN 37831

f
DOE-SR
Finance Division
P.O. Box A
Aiken, SC 29801

THE FOLLOWING CLAUSES CORRESPOND WITH THE REPORTS INDICATED IN THE CHECKLIST AND WILL BE INCLUDED IF REQUIRED UNDER THE AWARD. THE CONTRACT SPECIALIST SHOULD REMOVE THE CLAUSES BELOW THAT ARE NOT REQUIRED.

Federal Assistance Reporting Instructions (6/06)

The Recipient must prepare and submit all scientific/technical reports (including conference papers/proceedings, journal articles, software, and topical reports, if applicable) via E-link at http://www.osti.gov/elink-2413 [see specific instructions below regarding form submittal and format]. If you have any technical problems with using E-Link or DOE Form 241.3, calls should be directed to OSTI at 865-576-1223. However, if your question is related to other submission issues, you should contact the award administrator identified under block 12 of the DOE F 4600.1 Notice of Financial Assistance Award face page.

For all other reports indicated on the "Federal Assistance Reporting Checklist" (including management, financial, closeout and other reporting), the Recipient must prepare and submit these via the internet at FITS@NETL.DOE.GOV .

Successful completion of this award is contingent upon submittal of the reports or items specified on the "Federal Assistance Reporting Checklist" in accordance with the following instructions:

Failure to follow these instructions can delay data entry of the report(s) into the **NETL FEDERAL INFORMATION TRACKING SYSTEM (FITS)** and result in the report being lost or considered delinquent.

The level of detail the Recipient provides in the reports must be commensurate with the scope and complexity of the effort and must be as delineated in the guidelines and instructions contained herein. The prime Recipient must be responsible for acquiring data from any contractors or sub recipients and ensuring that any information submitted is compatible with the requirements of the DOE.

GUIDELINES FOR ELECTRONIC SUBMISSION AND FILE FORMAT OF NON-SCIENTIFIC/TECHNICAL REPORTS (includes management, financial, closeout and other reporting).

Production of high quality, electronic documents is dependent on the quality of the input that is provided. Thus, the Recipient must submit an electronic version of each report.

ELECTRONIC REPORTS MUST BE SUBMITTED IN THE ADOBE ACROBAT PORTABLE DOCUMENT FORMAT (PDF). ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT. IN ADDITION, THERE CAN BE NO RESTRICTIONS ON THE PDF FILE SUBMITTED THAT WOULD AFFECT OUR ABILITY TO OPEN OR EDIT THE REPORT DOCUMENT. THEREFORE, THE ONLY SECURITY METHOD THAT WILL BE ACCEPTED IS THE ADOBE ACROBAT "NO SECURITY' OPTION. THIS WILL ENABLE US TO PROPERLY INDEX AND PROCESS REPORT FILES.

Each report must be one integrated file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Files must not be write-protected or encrypted in any manner.

The electronic file(s) must be submitted via the Internet at: FITS@NETL.DOE.GOV. An e-mail message sent in conjunction with the file **must** contain the following information:

DOE Award Number
Type of Report(s)
Frequency of Report(s)
Reporting Period (if applicable)
Name of submitting organization
Name, phone number, and fax number of preparer

A. MANAGEMENT REPORTING (See Guidelines for Electronic Submission and File Format of Non-Scientific/Technical Reports)

PROGRESS REPORT

The Progress Report must provide a concise narrative assessment of the status of work and include the following information:

1. The DOE award number and name of the recipient.
2. The project title and name of the project director/principal investigator.
3. Date of report and period covered by the report.
4. Executive Summary- A well organized summary that highlights the important accomplishments and new knowledge realized from the project during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional "abstract" and identify noteworthy advancements in research, design, manufacture, or commercialization of technology developments. Also, summarize important breakthroughs that resolve critical science and technology risks or development barriers.
5. Results of work during reporting period- A detailed discussion of the progress performance. The format will be determined by the DOE Project Officer. (This section should not contain any proprietary or classified data, or other information not subject to public release. If such information is important to reporting progress, **do not** include the information in this electronic report. Such information **MUST** be submitted in a separate hard-copy appendix to this report as explained under the **Supplemental Guidelines** below).

   A suggested format is:

   Approach - this should describe, or reference all experimental, analytical and fabrication methods being used for the research and development efforts. It should also provide detail about materials and equipment being used. Standard methods can be referenced to the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available through the literature or other reference publications.

   Results and Discussion - It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem. When investigation methods and/or procedures are being utilized for the first time, they must be described in detail. This description must contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use and the accuracy of the method.

Conclusion - The conclusion should not simply reiterate what was already included in the "Results and Discussion" section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criterion of the program.

6. This section should not contain any trade secrets, business sensitive or classified data, or other information not subject to public release. (This section should not contain any proprietary or classified data, or other information not subject to public release. If such information is important to reporting progress, do not include the information in this electronic report. Such information **MUST** be submitted in a separate hard-copy appendix to this report as explained under the **Supplemental Guidelines** below.

7. STATUS REPORTING:

The following two sections of the Progress Report are to monitor uncosted obligations and project schedule/performance.

COST STATUS

The Cost Status reports the actual cost status of the award when compared with the original **Baseline Cost Plan** (i.e., the "Forecasted Cash Needs" originally provided on the SF-424A, Section D).

The suggested format for the **Cost Plan/Status** follows:

COST PLAN/STATUS

Baseline Reporting Quarter	YEAR 1 Start: End:				YEAR 2 Start: End:				YEAR 3 Start: End:			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Baseline Cost Plan (from SF-424A)	(From 424A, Sect. D)				(From 424A, Sect. E)							
Federal Share												
Non-Federal Share												
Total Planned (Federal and Non-Federal)												
Cumulative Baseline Cost												
Actual Incurred Costs												
Federal Share												
Non-Federal Share												
Total Incurred Costs-Quarterly (Federal and Non-Federal)												
Cumulative Incurred Costs												
Variance												
Federal Share												
Non-Federal Share												
Total Variance-Quarterly (Federal and Non-Federal)												
Cumulative Variance												

Notes:

The Baseline Cost Plan is the "Forecasted Cash Needs" provided on the original SF-424A, Section D for the current Budget Period (by Calendar Year Quarter) and will not be changed. If there are variances in the baseline, provide a brief analysis and recommendation.

Adjusting the baseline cost requires agreement of the DOE.

For Actual Incurred Costs, the recipient will insert the total amount of actual costs incurred for the quarterly period being reported, comprised of the DOE share and Recipient share.

The Variance is derived by subtracting the actual costs from the planned baseline costs, including an analysis explaining the variance.

MILESTONE STATUS

The **Milestone Status** measures changes in schedule or completion status of the originally anticipated (planned) critical path milestones (as set forth in the Milestone Plan under Attachment 3-SOPO) and their actual completion dates.

The **Milestone Plan/Status** will:

(1) Identify a set of clearly stated critical path project milestones (as contained under Attachment 3, SOPO),
(2) Clearly depict the actual progress achieved toward planned milestones,
(3) Identify any individual critical path milestone that was not met during the reporting period, and
(4) Include a summary statement of the rationale for not meeting the milestone, a future date (Budget Period, calendar year and quarter) when the milestone will be met, the impact to the project of missing the milestone (i.e., schedule slippage, cost growth, other), and a plan to get back on schedule.

A suggested format for the Milestone Plan/Status is provided below:

MILESTONE PLAN/STATUS REPORT

Task/ Subtask #	Critical Path Project Milestone Description*	Project Duration - Start: End:												Planned Start Date	Planned End Date	Actual Start Date	Actual End Date	Comments (notes, explanation of deviation from baseline plan)
		Project Year (PY) 1				PY 2				PY 3								
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12					

* NO FEWER THAN TWO (2) MILESTONES SHALL BE IDENTIFIED PER CALENDAR YEAR

8. A summary of all of the significant accomplishments during this reporting period. An "accomplishment" is a significant development or finding that advances the state-of-the-art with respect to the technology of interest or significantly contributes to the understanding of a concept or technology.

9. Actual or anticipated problems or delays and actions taken or planned to resolve them. Identify any event causing a significant schedule slippage or cost growth; an environmental, safety, or health violation; or the achievement of or problems encountered for an important performance objective.

10. A description of any product produced or technology transfer activities accomplished during this reporting period. Identify and describe any activities to transfer research results or developed technology to other research stakeholders or users of the technology, such as:

    a. Identify publications (list journal name, volume, issue); conference papers; or other public releases of results as required for submission under Conference Papers/Proceedings and Journal Articles below.

    b. Website or other Internet sites that reflect the results of this project.

    c. Networks or collaboration fostered.

    d. Technologies/Techniques.

    e. Inventions/Patent Applications.

    f. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.

SPECIAL STATUS REPORT

The recipient must report the following events to the DOE Project Officer (identified in Block 11 of the Notice of Financial Assistance Award face page) by e-mail as soon as possible after they occur. The Special Status Report should document the incidents listed below:

1. Developments that have a significant favorable impact on the project.

2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:

    a. Any single fatality or injuries requiring hospitalization of five or more individuals.
    b. Any significant environmental permit violation.

c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.

d. Any incident which causes a significant process or hazard control system failure.

e. Any event which is anticipated to cause a significant schedule slippage or cost increase.

f. Any damage to Government-owned equipment in excess of $50,000.

g. Any other incident that has the potential for high visibility in the media.

h. Any incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 days of discovery.

The e-mail correspondence should include:

1. Recipient's name and address;
2. Award title and number;
3. Date;
4. Brief statement of problem or event;
5. Anticipated impacts; and
6. Corrective action taken or recommended.

When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first; if possible, and coordinated with NETL Communications and Public Affairs Division, the DOE Project Officer and the Contracting Officer.

B. SCIENTIFIC/TECHNICAL REPORTING

Scientific/Technical Reporting includes: Final Scientific/Technical Report, Topical Reports, Conference Papers/Proceedings, Software, and Journal Articles.

GUIDELINES FOR ELECTRONIC SUBMISSION AND ORGANIZATION OF FINAL SCIENTIFIC/TECHNICAL AND TOPICAL REPORTS

Electronic Submission. The final scientific/technical report and topical reports must be submitted electronically via the DOE Energy Link System (E-Link) at http://www.osti.gov/elink-2413.

Electronic Format. REPORTS MUST BE SUBMITTED IN THE ADOBE PORTABLE DOCUMENT FORMAT (PDF) AND BE ONE INTEGRATED PDF FILE THAT CONTAINS ALL TEXT, TABLES, DIAGRAMS, PHOTOGRAPHS, SCHEMATIC, GRAPHS, AND CHARTS. ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT. IN ADDITION, THERE CAN BE NO RESTRICTIONS ON THE PDF FILE SUBMITTED THAT WOULD AFFECT OUR ABILITY TO OPEN OR EDIT THE REPORT DOCUMENT. THEREFORE, THE ONLY SECURITY METHOD THAT WILL BE ACCEPTED IS THE ADOBE ACROBAT 'NO SECURITY' OPTION. THIS WILL ENABLE US TO PROPERLY INDEX AND PROCESS REPORT FILES.

Materials, such as prints, videos, and books, that are essential to the report but cannot be submitted

electronically, should be sent to the DOE Award Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. The report must be accompanied by a completed electronic version of **DOE Form 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI).**" You can complete, upload, and submit the DOE F.241.3 online via E-Link. You are encouraged not to submit Protected EPAct Information in these electronic technical reports. These technical reports must also not contain any Limited Rights Data (such as trade secret, proprietary or business sensitive information), classified information, information subject to export control classification, or other information not subject to release. Such information **must** be submitted in a separate hard-copy appendix to the electronic technical and topical reports as explained under **Supplemental Guidelines** below. Organization. The following sections should be included (as appropriate) in the final scientific/technical report and topical reports in the sequence shown. Any section denoted by an asterisk is **required** in all final technical and topical reports.

TITLE PAGE* - The Title Page of the report itself must contain the following information in the following sequence:

Report Title
Type of Report (Final Scientific/Technical or Topical)
Reporting Period Start Date
Reporting Period End Date
Principal Author(s)
Date Report was Issued (Month [spelled out] and Year [4 digits])
DOE Award Number (e.g., DE-FG26-05NT12345) and if appropriate, task number
Name and Address of Submitting Organization (This section should also contain the name and address of significant subcontractors/sub-recipients participating in the production of the report.)

DISCLAIMER* -- The Disclaimer must follow the title page, and must contain the following paragraph:

> "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

ABSTRACT* - should be a brief, concise summary of the report.

TABLE OF CONTENTS*

EXECUTIVE SUMMARY* - this should be a well organized summary that highlights the important accomplishments of the research during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional "abstract."

REPORT DETAILS - The body of the final scientific/technical or topical report should address topics such as the following:

> **Experimental methods:** Describe, or reference all experimental methods being utilized. Also provide detail(s) about materials and equipment used. Standard methods should reference the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available thru the literature or other reference publications.
>
> **Results and discussions:** This section should include enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. Explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem.
>
> **Conclusion:** The conclusion should not simply reiterate what was already included in "Results and Discussion" but should summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criterion of the program.

GRAPHICAL MATERIALS LIST(S)
REFERENCES
BIBLIOGRAPHY
LIST OF ACRONYMS AND ABBREVIATIONS
APPENDICES (IF NECESSARY)

SUPPLEMENTAL GUIDELINES

NETL cannot release technical reports that include Limited Rights Data (such as trade secret, proprietary or business sensitive information). Thus, if such information is important to technical reporting requirements, it **must** be submitted in a separate appendix to the electronic technical report. This appendix **MUST NOT** be submitted in an electronic format but rather submitted separately in **TWO GOOD QUALITY PAPER COPIES** when the electronic version of the sanitized technical report is submitted. The appendix must not be referenced in or incorporated into the sanitized technical report deliverable under the award. The appendix must be appropriately marked and identified. Only the legend provided in the Rights in Data clause in this award may be placed on the appendix. The appendix must be sent to:

NETL AAD DOCUMENT CONTROL
BUILDING 921
U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY
P.O. BOX 10940
PITTSBURGH, PA 15236-0940

Further, if this award authorizes the recipient under the provisions of The Energy Policy Act of

1992 (EPAct) to request protection from public disclosure for a limited period of time of certain information developed under this award, the main body of electronic technical reports MUST NOT contain such Protected Information. TWO GOOD QUALITY PAPER COPIES of such information must be submitted to the address above in a separate appendix to the sanitized electronic version of the technical report. The appendix must not be referenced in or incorporated into, the sanitized technical report deliverable under the award. In accordance with the clause titled "Rights in Data-Programs Covered Under Special Data Statutes," the appendix must be appropriately marked, including the date when the period of protection for the data ends. The EPAct appendix must be appropriately identified with the recipient's name, award number, type of report (final or topical), and reporting period start and end dates.

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

Measurement Units -- All reports to be delivered under this instrument must use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units must be followed by their U.S. Customary Equivalents in parentheses ( ). **The Recipient must insert the text of this clause, including this paragraph, in all subcontracts under this award.** Note: SI is an abbreviation for "Le Systeme International d'Unites."

FINAL SCIENTIFIC/TECHNICAL REPORT

The Final Scientific/Technical Report must document and summarize all work performed during the award period in a comprehensive manner. It must also present findings and/or conclusions produced as a consequence of this work. This report must not merely be a compilation of information contained in other reports, but must present that information in an integrated fashion, and shall be augmented with findings and conclusions drawn from the research as a whole.

CONFERENCE PAPERS/PROCEEDINGS AND JOURNAL ARTICLES

Content. The recipient must submit a copy of any conference papers/proceedings, with the following information: (1) Name of conference; (2) Location of conference (city, state, and country); (3) Date of conference (month/day/year); and (4) Conference sponsor.

INCLUDE IF THE AWARD IS TO A LARGE BUSINESS ORGANIZATION.

CONFERENCE PAPERS, PROCEEDINGS, AND JOURNAL ARTICLES GENERATED BY LARGE BUSINESSES

The Recipient must submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, that is not an educational institution, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include conference papers, proceedings, and journal articles. The Recipient must submit to DOE for review and comment all documents generated by any subcontractor that is an educational institution. Such documents include conference papers, proceedings, and journal articles. Upon completion of review, the DOE Project Officer will notify the Recipient of approval or recommended changes.

INCLUDE IF THE AWARD IS TO A SMALL BUSINESS OR NON-PROFIT ORGANIZATION.

CONFERENCE PAPERS, PROCEEDINGS, AND JOURNAL ARTICLES, GENERATED BY A SMALL BUSINESS OR NONPROFIT ORGANIZATION

The Recipient must submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, that is not an educational institution, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. The Recipient must submit to DOE for review and comment all documents generated by any subcontractor that is an educational institution. Such documents include conference papers, proceedings, and journal articles. Upon completion of review, the DOE Project Officer will notify the Recipient of approval or recommended changes.

INCLUDE IF THE AWARD IS TO A UNIVERSITY OR EDUCATIONAL INSTITUTION.

CONFERENCE PAPERS, PROCEEDINGS, AND JOURNAL ARTICLES, GENERATED BY A UNIVERSITY

The Recipient must submit to DOE for review and comment all documents generated by the Recipient, or any subcontractor, that is an educational institution, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. The Recipient must submit to DOE for review and approval all documents generated by any subcontractor that is not an educational institution. Such documents include conference papers, proceedings, and journal articles. Upon completion of review, the DOE Project Officer will notify the Recipient of recommended changes.

Electronic Submission. Scientific/technical conference paper/proceedings must be submitted electronically-via the DOE Energy Link System (E-Link) at http://www.osti.gov/elink-2413. Non-scientific/technical conference papers/proceedings must be sent to the NETL Intranet address at: FITS@NETL.DOE.GOV.

Electronic Format. Conference papers/proceedings must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts.

Submittal Form. Scientific/technical conference papers/proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on E-Link at http://www.osti.gov/elink-2413. This form is not required for non-scientific or non-technical conference papers or proceedings.

INCLUDE IF SOFTWARE IS TO BE DELIVERED.

SOFTWARE/MANUAL

Content. Unless otherwise specified in the award, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts.

Electronic Submission. Submissions may be submitted electronically-via the DOE Energy Link System

(E-Link) at http://www.osti.gov/estsc/241-4pre.jsp. They may also be submitted via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

Submittal Form. Each software deliverable and its manual must be accompanied by a completed DOE Form 241.4 "Announcement of U.S. Department of Energy Computer Software." The form and instructions are available on E-Link at http://www.osti.gov/estsc/241-4pre.jsp.

TOPICAL REPORTS

Topical reports are intended to provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail significant new scientific or technical advances. The topical report format should follow the guidelines set forth above for technical reporting.

C. FINANCIAL REPORTING

Recipients must complete the financial reports identified on the Reporting Checklist in accordance with the report instructions. These standard forms are available at http://www.whitehouse.gov/omb/grants/index.html. Fillable forms are available at http://grants.pr.doe.gov.

D. CLOSEOUT REPORTING

FINAL INVENTION AND PATENT REPORT

The recipient must provide a DOE Form 2050.11, "PATENT CERTIFICATION." This form is available at http://www.directives.doe.gov/pdfs/forms/2050-11.pdf and http://grants.pr.doe.gov.

PROPERTY CERTIFICATION

The recipient must provide the Property Certification, including the required inventories of non-exempt property located at http://grants.pr.doe.gov.

E. OTHER REPORTING

ANNUAL INDIRECT COST PROPOSAL AND RECONCILIATION

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs.

Cognizant Agency. The recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving indirect costs. If the DOE awarding office is the cognizant agency, submit the annual indirect cost proposal to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award.

ANNUAL INVENTORY OF FEDERALLY OWNED PROPERTY

Requirement. If at any time during the award the recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the recipient must submit an annual inventory of this property to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award no later than October 30th of each calendar year, to cover an annual reporting period ending on the preceding September 30th.

Content of Inventory. The inventory must include a description of the property, tag number, acquisition date, location of property, and acquisition cost, if purchased with project funds. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

APPENDIX D

GOVERNMENT-OWNED PROPERTY

Total line items = 1,141
Total dollar value = $9,361,147

TAG	DESCRIPTION	VALUE
SRO9165	4-WHEELER, HONDA FOURTRAX ATV	$3,750
SRO9166	4-WHEELER, KAWASAKI 400 ATV	$4,999
SRO6287	4-WHEELER, KAWASAKI BAYOU 220 ATV	$3,135
471293	ACID PURIFICATION APPARATUS, BERGHOF/AME--RICA (BOX)	$4,600
541369	ACOUSTIC SPECTROMETER, DISPERSION TECHNOLOGY DT-1200	$56,900
SRO5802	AERIAL PLATFORM, UP-RIGHT SL26SLDF	$23,000
477156	AIR COMPRESSOR, CORKEN A490K4FBA	$6,760
501800	ALPHA SPECTROSCOPY SYSTEM, CANBERRA NUCLEAR 7401 (3)	$9,628
531884	AMPLIFIER, CANBERRA 9615 (3) (UNTAGGED)	$4,245
500762	AMPLIFIER, EG&G 92X-II SPECTRUM MASTER	$7,556
558969	AMPLIFIER, EG&G ORTEC 92X SPECTRUM MASTER	$7,000
512305	ANAEROBIC CHAMBER, COY LAB TYPE B (4)	$9,076
500524	AQUEOUS SYSTEM, LABCONCO CENTRIVAP (2)	$3,917
485495	AREA METER, CID CI-203 PORTABLE LASER (GREY CASE)	$5,385
553722	AREA METER, DELTA-T (5)	$3,655
464911	ATTENUATOR, NEWPORT 935-5-OPT (3)	$6,450
492536	AUDIO FOR VIDEO CONFERENCER, GENTNER AVT7000	$3,396
463678	AUTO GAMMA COUNTER, PACKARD 5530 MINIAXI	$19,620
464442	AUTO GAMMA COUNTER, PACKARD 5530 MINIAXI	$22,995
467986	AUTOCLAVE, MARKET FORGE STM-3L	$7,084
519956	AUTOCLAVE, MARKET FORGE STME	$5,397
519957	AUTOCLAVE, MARKET FORGE STME	$5,397
546495	AUTOCLAVE, MARKET FORGE STME	$5,613
492504	AUTOCLAVE, MARKET FORGE STME-L	$8,000
554126	AUTOMATED THERMAL DESORBER, PERKIN ELMER TURBOMATRIX ATD	$37,048
497037	AUTOSAMPLE COMPARTMENT, ISS KOALA (3)	$36,045
543825	AUTOSAMPLER, AGILENT TECHNOLOGIES G1896A (3)	$11,899
577945	AUTOSAMPLER, COSTECH ZERO BLANK	$4,225
566720	AUTOSAMPLER, CTC ANALYTICS COMBIPAL MXY02-00B	$17,970
566721	AUTOSAMPLER, CTC ANALYTICS GCPAL	$15,504
515615	AUTOSAMPLER, HEWLETT PACKARD G1512A GC (3)	$11,429
553750	AUTOSAMPLER, PERKIN ELMER AS-90 FIAS	$4,830
538066	AUTOSAMPLER, PERKIN ELMER AS-91	$5,074
538040	AUTOSAMPLER, PERKIN ELMER AS-93 PLUS	$9,097
539718	AUTOSAMPLER, TEKMAR DOHRMANN SOLATEK 72	$20,689
543542	AUTOSAMPLER, TEKMAR DOHRMANN SOLATEK 72	$20,781

558967	AUTOSAMPLER, THERMO QUEST AS 128	$6,370
521072	AUTOSAMPLER, THERMO SEPARATION SPECTRA SYSTEM AS3500	$9,992
464422	AUTOSAMPLER, TSP AS3500 SPECTRASYSTEM	$10,137
SRO5395	BACKHOE, JOHN DEERE 710B	$53,200
2376	BALANCE, DENVER 400XE	$495
457133	BALANCE, DENVER AB-120	$3,548
2413	BALANCE, DENVER M300	$2,290
2396	BALANCE, DENVER TR204	$1,712
2412	BALANCE, DENVER XD-4KD	$1,106
2380	BALANCE, DENVER XL3KD	$900
2411	BALANCE, FISHER XT 100A	$1,201
2388	BALANCE, METTLER AB104	$1,665
2415	BALANCE, METTLER AE163	$2,446
2391	BALANCE, METTLER AE240	$2,606
443145	BALANCE, METTLER AE240	$3,120
546868	BALANCE, METTLER AG285	$3,355
2417	BALANCE, METTLER AJ100	$1,321
2403	BALANCE, METTLER AJ100	$1,550
2398	BALANCE, METTLER AJ100	$1,624
484235	BALANCE, METTLER AT201	$5,132
452087	BALANCE, METTLER AT261	$4,066
573432	BALANCE, METTLER AT261 DELTA RANGE	$4,066
512394	BALANCE, METTLER AT261 DELTA RANGE	$4,866
556475	BALANCE, METTLER AX504 DELTA RANGE	$4,176
2400	BALANCE, METTLER BB2440 DELTA RANGE	$1,032
778	BALANCE, METTLER K7T	$500
2401	BALANCE, METTLER PB3002 DELTA RANGE	$1,214
2402	BALANCE, METTLER PB3002 DELTA RANGE	$1,254
2406	BALANCE, METTLER PB3002-S	$1,265
2419	BALANCE, METTLER PB303-S	$1,285
2383	BALANCE, METTLER PC2200	$1,254
2423	BALANCE, METTLER PC440	$1,632
2432	BALANCE, METTLER PC440	$1,632
2404	BALANCE, METTLER PC440	$1,632
2430	BALANCE, METTLER PC4400	$2,241
2392	BALANCE, METTLER PC4400	$2,306
2393	BALANCE, METTLER PE160	$1,280
2389	BALANCE, METTLER PE160	$1,490
2384	BALANCE, METTLER PE3600	$1,028
2375	BALANCE, METTLER PE400	$950
2390	BALANCE, METTLER PE400	$1,176
2382	BALANCE, METTLER PE400	$1,575
2397	BALANCE, METTLER PG5002	$1,732
2422	BALANCE, METTLER PM200	$1,556
2420	BALANCE, METTLER PM200	$1,739

2416	BALANCE, METTLER PM200	$1,913
2421	BALANCE, METTLER PM300	$1,328
2414	BALANCE, METTLER PM30-K	$1,920
2427	BALANCE, METTLER PM400	$1,994
551066	BALANCE, METTLER PR2003 DELTA RANGE	$3,829
2418	BALANCE, METTLER PR803	$2,826
2410	BALANCE, OHAUS AP250D	$2,403
2405	BALANCE, SARTORIUS 1712MP8	$2,132
2425	BALANCE, SARTORIUS 1872	$1,496
2399	BALANCE, SARTORIUS A120S	$1,421
2386	BALANCE, SARTORIUS LP6200S	$2,200
531379	BALANCE, SARTORIUS M2P MICRO	$9,495
2424	BALANCE, SARTORIUS MP8	$1,665
2385	BALANCE, SARTORIUS R160D-RS	$2,224
2394	BALANCE, SARTORIUS R300S	$2,245
2387	BALANCE, SAUTER E1200 (2)	$1,860
541319	BASE, DELL POWERVAULT 700N	$6,994
527570	BASE, DELL POWERVAULT 700N	$11,985
521800	BASE, DELL POWERVAULT 700N	$13,122
459502	BELT SANDER, KALAMAZOO S-8W	$3,516
SRO7577	BOAT, ALUMACRAFT JON 16'	$2,490
SRO7565	BOAT, BENNINGTON 225LE PONTOON	$9,629
SRO7557	BOAT, BOSTON WHALER MONTAUK 17	$7,290
SRO7558	BOAT, BOSTON WHALER MONTAUK 17	$7,290
SRO7574	BOAT, BOSTON WHALER MONTAUK 17	$8,900
SRO7581	BOAT, BOSTON WHALER MONTAUK 17	$13,752
SRO7580	BOAT, DURACRAFT JON	$4,271
SRO7563	BOAT, GO DEVIL 18X44	$4,124
SRO6061	BOAT, PANTHER 18X8 AIRBOAT	$29,105
SRO5810	BOAT, PANTHER AIRBOAT	$8,952
SRO7579	BOAT, SMITH-ROOT SR-16 ELECTROFISHING	$23,687
SRO7578	BOAT, WAR EAGLE JON	$1,100
475273	BURROW PROBE CAMERA, FUHRMAN DIVERSIFIED MODEL 3	$4,305
561162	BURROW PROBE CAMERA, SER (2)	$1,320
SRO7475	BUSH HOG, HONDA GT42 ROTARY CUTTER 42"	$1,595
440928	CABINET, BBL 60631 BIOHAZARD	$9,967
482005	CABLE TESTER, TEKTRONIX 1502B METALLIC TDR (9)	$19,321
545529	CALORIMETER, TA INSTRUMENTS 912S SCANNING	$11,526
537677	CAMCORDER, CANON ELURA2 MC DIGITAL VIDEO	$1,318
527857	CAMCORDER, CANON GL1 3CCD DIGITAL VIDEO	$2,495
424771	CAMERA BODY, WILD MPS 51 MICROSCOPE	$2,685
436390	CAMERA CONTROL SYSTEM, WILD MPS45 PHOTOAUTOMAT (2)	$7,228
473352	CAMERA SYSTEM, PARCO CV-710NDC (4)	$1,197
570185	CAMERA, CANON EOS REBEL DIGITAL EF-S	$1,014
501094	CAMERA, CANON VC-C1 MKII COMMUNICATION	$3,000

491062	CAMERA, CANON VC-C1 MKII COMMUNICATION	$3,137
450475	CAMERA, COHU 4815-2000 W/LENS	$1,409
444530	CAMERA, COHU 4815-2000 W/LENS	$1,470
457692	CAMERA, COHU 4815-2000 W/O LENS (BLUE BAG)	$1,703
524040	CAMERA, DIAGNOSTIC INSTRUMENTS SP100-2 DIGITAL (NO TAG)	$10,903
501705	CAMERA, EAGLE EYE II STRATAGENE CCD	$7,500
576973	CAMERA, HAMAMATSU C4742-98 DIGITAL (2)	$28,130
425304	CAMERA, MTI VC-65SLX VIDEO	$1,968
451220	CAMERA, NEC NC-15 CCD COLOR TV	$1,918
522650	CAMERA, NIKON COOLPIX 950 2.1MP DIGITAL	$1,216
521104	CAMERA, NIKON F100	$2,160
465047	CAMERA, NIKON F4 35MM	$1,837
444606	CAMERA, NIKON MTI CCD-72SX (2)	$9,970
530116	CAMERA, OLYMPUS C-2500L 2.5MP 3X ZOOM DIGITAL	$1,587
545645	CAMERA, OLYMPUS DP12-B DIGITAL CCD (FOR MICROSCOPE)	$3,143
425015	CAMERA, OLYMPUS PM 10AD MICROPROCESSOR (2)	$2,867
553746	CAMERA, SONY CCD HVM-332 B&W	$1,796
553747	CAMERA, SONY CCD HVM-332 B&W	$1,796
553748	CAMERA, SONY CCD HVM-332 B&W	$1,796
553762	CAMERA, SONY CCD RGB	$2,674
553757	CAMERA, SONY CCD RGB	$2,675
520749	CAMERA, SONY DSC-D700 DIGITAL	$1,695
501088	CAMERAMAN, PARKERVISION ACS-2000-P1A SYSTEM II (2)	$9,017
436086	CASK, SRC FAB LEAD SHIELDED (W/CESIUM SOURCE)	$20,890
456465	CELL COUNTER/ANALYZER, COULTER ZM (2)	$13,495
527209	CENTRIFUGE, BECKMAN J6-MI W/ROTOR	$86,696
500526	CENTRIFUGE, FISHER MARATHON 22K (W/ROTORS)	$4,371
565313	CENTRIFUGE, IEC CENTRA MP4R W/ROTOR (NOT TAGGED)	$8,260
424783	CENTRIFUGE, IEC CENTRA-7R	$4,952
451054	CENTRIFUGE, IEC CENTRA-HN W/ROTOR	$3,680
474180	CENTRIFUGE, IEC LAB W/ROTOR AND SIX BUCKETS	$9,805
475610	CENTRIFUGE, MED-REP JOUAN CR412 W/ROTOR AND BUCKET	$6,921
541437	CENTRIFUGE, SORVALL RC 5B PLUS W/ROTOR	$19,850
511091	CENTRIFUGE, SORVALL RC 5B PLUS W/ROTOR	$20,948
424785	CENTRIFUGE, SORVALL RC2-B AUTO SUPERSPEED W/4 ROTORS	$6,562
SRO2667	CHIPPER/SHREDDER, CRARY BEARCAT 71620	$5,695
500768	COAXIAL DETECTOR, EG&G GEM-50210 (2) (INSIDE 471381)	$21,767
456775	COAXIAL DETECTOR, EG&G ORTEC (12)	$75,040
499912	CODEC, REMBRANDT II/VP 215	$31,525
478247	COMPOSITION ANALYZER, EM-SCAN SA-3000 (2)	$8,745
462551	COMPOSITION ANALYZER, EM-SCAN SA-3000 TOTAL BODY (8)	$25,045
448253	COMPUTER, ACMA 486/25	$4,320
577187	COMPUTER, ANTEC	$2,501
584754	COMPUTER, APPLE IBOOK G4 NOTEBOOK	$1,323
491054	COMPUTER, AST BRAVO LC 5100	$4,959

522033	COMPUTER, COMPAQ DESK PRO	$1,549
505769	COMPUTER, COMPAQ DESK PRO	$1,676
520159	COMPUTER, COMPAQ PROSIGNIA 6500	$2,639
444510	COMPUTER, COMPUADD 316S	$3,476
468071	COMPUTER, COMPUADD 433TXC NOTEBOOK	$2,800
543076	COMPUTER, CYCLEAGE	$3,000
522070	COMPUTER, DELL DIMENSION	$1,210
547753	COMPUTER, DELL DIMENSION 2100	$1,175
544605	COMPUTER, DELL DIMENSION 2100	$1,575
562166	COMPUTER, DELL DIMENSION 2350	$1,491
578439	COMPUTER, DELL DIMENSION 3000	$1,429
533313	COMPUTER, DELL DIMENSION 4100	$1,226
533685	COMPUTER, DELL DIMENSION 4100	$1,665
535649	COMPUTER, DELL DIMENSION 4100	$2,221
548601	COMPUTER, DELL DIMENSION 4400	$1,926
549617	COMPUTER, DELL DIMENSION 4400	$2,470
553017	COMPUTER, DELL DIMENSION 4500	$1,476
552948	COMPUTER, DELL DIMENSION 4500	$2,011
559659	COMPUTER, DELL DIMENSION 4550	$1,106
558539	COMPUTER, DELL DIMENSION 4550	$1,345
558254	COMPUTER, DELL DIMENSION 4550	$1,468
556508	COMPUTER, DELL DIMENSION 4550	$1,524
557429	COMPUTER, DELL DIMENSION 4550	$1,621
556134	COMPUTER, DELL DIMENSION 4550	$1,710
556796	COMPUTER, DELL DIMENSION 4550	$1,907
561295	COMPUTER, DELL DIMENSION 4550	$2,184
568296	COMPUTER, DELL DIMENSION 4600	$1,079
574919	COMPUTER, DELL DIMENSION 4600	$1,645
572222	COMPUTER, DELL DIMENSION 4600C	$1,602
569067	COMPUTER, DELL DIMENSION 4600C	$1,699
543644	COMPUTER, DELL DIMENSION 8100	$1,776
543749	COMPUTER, DELL DIMENSION 8100	$1,793
543750	COMPUTER, DELL DIMENSION 8100	$1,793
539052	COMPUTER, DELL DIMENSION 8100	$1,868
539051	COMPUTER, DELL DIMENSION 8100	$1,868
543135	COMPUTER, DELL DIMENSION 8100	$1,890
537484	COMPUTER, DELL DIMENSION 8100	$2,266
539535	COMPUTER, DELL DIMENSION 8100	$2,487
537487	COMPUTER, DELL DIMENSION 8100	$2,801
538539	COMPUTER, DELL DIMENSION 8100	$3,227
535585	COMPUTER, DELL DIMENSION 8100	$3,295
537948	COMPUTER, DELL DIMENSION 8100	$3,609
535455	COMPUTER, DELL DIMENSION 8100	$3,911
556486	COMPUTER, DELL DIMENSION 8200	$1,581
548200	COMPUTER, DELL DIMENSION 8200	$1,784

554341	COMPUTER, DELL DIMENSION 8200	$1,811
557333	COMPUTER, DELL DIMENSION 8200	$1,811
555373	COMPUTER, DELL DIMENSION 8200	$1,893
547428	COMPUTER, DELL DIMENSION 8200	$1,916
547368	COMPUTER, DELL DIMENSION 8200	$2,050
549411	COMPUTER, DELL DIMENSION 8200	$2,082
546740	COMPUTER, DELL DIMENSION 8200	$2,167
546741	COMPUTER, DELL DIMENSION 8200	$2,167
542114	COMPUTER, DELL DIMENSION 8200	$2,356
544588	COMPUTER, DELL DIMENSION 8200	$2,441
544299	COMPUTER, DELL DIMENSION 8200	$2,554
546929	COMPUTER, DELL DIMENSION 8200	$2,634
542117	COMPUTER, DELL DIMENSION 8200	$2,655
547129	COMPUTER, DELL DIMENSION 8200	$2,736
546530	COMPUTER, DELL DIMENSION 8200	$2,768
546529	COMPUTER, DELL DIMENSION 8200	$2,768
546742	COMPUTER, DELL DIMENSION 8200	$2,797
544911	COMPUTER, DELL DIMENSION 8200	$3,279
554873	COMPUTER, DELL DIMENSION 8200	$3,384
553010	COMPUTER, DELL DIMENSION 8200	$4,150
547055	COMPUTER, DELL DIMENSION 8200	$4,565
557920	COMPUTER, DELL DIMENSION 8250	$1,678
558319	COMPUTER, DELL DIMENSION 8250	$2,253
572223	COMPUTER, DELL DIMENSION 8300	$1,835
568197	COMPUTER, DELL DIMENSION 8300	$1,871
568198	COMPUTER, DELL DIMENSION 8300	$1,871
563429	COMPUTER, DELL DIMENSION 8300	$1,964
563475	COMPUTER, DELL DIMENSION 8300	$1,964
568199	COMPUTER, DELL DIMENSION 8300	$2,214
567205	COMPUTER, DELL DIMENSION 8300	$2,409
569266	COMPUTER, DELL DIMENSION 8300	$2,451
565757	COMPUTER, DELL DIMENSION 8300	$2,479
578239	COMPUTER, DELL DIMENSION 8400	$1,927
579012	COMPUTER, DELL DIMENSION 8400	$2,258
522936	COMPUTER, DELL DIMENSION L400C	$4,000
522778	COMPUTER, DELL DIMENSION L500C	$1,542
535653	COMPUTER, DELL DIMENSION L866R	$1,283
500759	COMPUTER, DELL DIMENSION M200A	$2,199
514918	COMPUTER, DELL DIMENSION V400	$1,837
514917	COMPUTER, DELL DIMENSION V400	$1,837
561296	COMPUTER, DELL DIMENSION XPS	$3,564
565755	COMPUTER, DELL DIMENSION XPS	$3,863
516302	COMPUTER, DELL DIMENSION XPS 450	$3,866
525216	COMPUTER, DELL DIMENSION XPS B733R	$3,917
531295	COMPUTER, DELL DIMENSION XPS B800	$2,249

526720	COMPUTER, DELL DIMENSION XPS B800R	$2,430
534621	COMPUTER, DELL DIMENSION XPS B866	$2,925
533702	COMPUTER, DELL DIMENSION XPS B866	$3,501
529124	COMPUTER, DELL DIMENSION XPS B866R	$2,354
527012	COMPUTER, DELL DIMENSION XPS B866R	$5,000
501860	COMPUTER, DELL DIMENSION XPS D233	$3,665
507983	COMPUTER, DELL DIMENSION XPS D333	$2,604
578603	COMPUTER, DELL DIMENSION XPS GEN4	$2,957
482592	COMPUTER, DELL DIMENSION XPS P133C	$4,700
489396	COMPUTER, DELL DIMENSION XPS P166S	$3,164
472616	COMPUTER, DELL DIMENSION XPS P90	$3,165
500247	COMPUTER, DELL DIMENSION XPS PRO 200N	$4,995
511345	COMPUTER, DELL DIMENSION XPS R350	$2,050
511344	COMPUTER, DELL DIMENSION XPS R350	$2,121
509346	COMPUTER, DELL DIMENSION XPS R350	$4,576
513858	COMPUTER, DELL DIMENSION XPS R400	$1,928
512649	COMPUTER, DELL DIMENSION XPS R400	$1,997
513157	COMPUTER, DELL DIMENSION XPS R400	$2,043
512648	COMPUTER, DELL DIMENSION XPS R400	$2,212
514470	COMPUTER, DELL DIMENSION XPS R400	$2,306
512645	COMPUTER, DELL DIMENSION XPS R400	$2,435
512510	COMPUTER, DELL DIMENSION XPS R400	$2,599
511138	COMPUTER, DELL DIMENSION XPS R400	$2,747
509986	COMPUTER, DELL DIMENSION XPS R400	$2,752
557335	COMPUTER, DELL DIMENSION XPS R400	$2,753
509985	COMPUTER, DELL DIMENSION XPS R400	$2,786
509227	COMPUTER, DELL DIMENSION XPS R400	$2,893
512247	COMPUTER, DELL DIMENSION XPS R400	$2,915
509993	COMPUTER, DELL DIMENSION XPS R400	$2,965
510028	COMPUTER, DELL DIMENSION XPS R400	$3,125
509992	COMPUTER, DELL DIMENSION XPS R400	$3,150
513861	COMPUTER, DELL DIMENSION XPS R450	$2,048
514559	COMPUTER, DELL DIMENSION XPS R450	$2,987
513860	COMPUTER, DELL DIMENSION XPS R450	$3,140
514558	COMPUTER, DELL DIMENSION XPS R450	$3,183
514916	COMPUTER, DELL DIMENSION XPS R450	$3,241
515504	COMPUTER, DELL DIMENSION XPS R450	$3,294
515599	COMPUTER, DELL DIMENSION XPS R450	$4,841
577698	COMPUTER, DELL DIMENSION XPS SERIVS	$3,400
520503	COMPUTER, DELL DIMENSION XPS T450	$1,932
520357	COMPUTER, DELL DIMENSION XPS T450	$2,120
519975	COMPUTER, DELL DIMENSION XPS T450	$2,313
523957	COMPUTER, DELL DIMENSION XPS T500	$1,681
523956	COMPUTER, DELL DIMENSION XPS T500	$1,681
518959	COMPUTER, DELL DIMENSION XPS T500	$2,109

519560	COMPUTER, DELL DIMENSION XPS T500	$2,172
520349	COMPUTER, DELL DIMENSION XPS T500	$2,564
516304	COMPUTER, DELL DIMENSION XPS T500	$2,595
516303	COMPUTER, DELL DIMENSION XPS T500	$2,776
523955	COMPUTER, DELL DIMENSION XPS T500 (UNTAGGED)	$1,741
525217	COMPUTER, DELL DIMENSION XPS T550	$1,809
521281	COMPUTER, DELL DIMENSION XPS T550	$2,226
520078	COMPUTER, DELL DIMENSION XPS T550	$2,742
522202	COMPUTER, DELL DIMENSION XPS T550	$3,084
527571	COMPUTER, DELL DIMENSION XPS T600R	$1,904
573433	COMPUTER, DELL DIMENSION XPS T650R	$1,774
527871	COMPUTER, DELL DIMENSION XPS T800R	$2,890
530569	COMPUTER, DELL DIMENSION XPS T850R	$1,786
569188	COMPUTER, DELL INSPIRON 1100 NOTEBOOK	$1,412
578575	COMPUTER, DELL INSPIRON 1150 NOTEBOOK	$1,757
522069	COMPUTER, DELL INSPIRON 3500 NOTEBOOK	$2,715
518019	COMPUTER, DELL INSPIRON 3500 NOTEBOOK	$2,770
520670	COMPUTER, DELL INSPIRON 3500 NOTEBOOK	$3,310
529278	COMPUTER, DELL INSPIRON 3800 NOTEBOOK	$3,083
539053	COMPUTER, DELL INSPIRON 4000 NOTEBOOK	$2,564
535648	COMPUTER, DELL INSPIRON 4000 NOTEBOOK	$3,256
531674	COMPUTER, DELL INSPIRON 5000 NOTEBOOK	$2,927
531296	COMPUTER, DELL INSPIRON 5000 NOTEBOOK	$3,629
563073	COMPUTER, DELL INSPIRON 5100 NOTEBOOK (2)	$2,174
567823	COMPUTER, DELL INSPIRON 5150 NOTEBOOK	$4,654
564595	COMPUTER, DELL INSPIRON 600M NOTEBOOK	$2,485
512821	COMPUTER, DELL INSPIRON 7000 NOTEBOOK	$3,800
520793	COMPUTER, DELL INSPIRON 7000 NOTEBOOK	$4,098
519978	COMPUTER, DELL INSPIRON 7000 NOTEBOOK	$4,214
520672	COMPUTER, DELL INSPIRON 7000 NOTEBOOK	$4,584
520361	COMPUTER, DELL INSPIRON 7000 NOTEBOOK (2)	$3,932
520671	COMPUTER, DELL INSPIRON 7000 NOTEBOOK (2)	$5,315
529591	COMPUTER, DELL INSPIRON 7500 NOTEBOOK	$2,876
524928	COMPUTER, DELL INSPIRON 7500 NOTEBOOK	$3,308
526673	COMPUTER, DELL INSPIRON 7500 NOTEBOOK	$4,340
531675	COMPUTER, DELL INSPIRON 7500 NOTEBOOK	$4,619
531672	COMPUTER, DELL INSPIRON 7500 NOTEBOOK (2)	$5,401
539479	COMPUTER, DELL INSPIRON 8000 NOTEBOOK	$3,438
536494	COMPUTER, DELL INSPIRON 8000 NOTEBOOK	$4,961
556659	COMPUTER, DELL INSPIRON 8200 NOTEBOOK	$3,116
553011	COMPUTER, DELL INSPIRON 8200 NOTEBOOK	$3,410
568980	COMPUTER, DELL INSPIRON 8200 NOTEBOOK	$3,668
574000	COMPUTER, DELL INSPIRON 9100 NOTEBOOK	$3,261
574001	COMPUTER, DELL INSPIRON 9100 NOTEBOOK	$3,261
573194	COMPUTER, DELL LATITUDE 100L NOTEBOOK	$1,550

545172	COMPUTER, DELL LATITUDE C610 NOTEBOOK	$3,238
556753	COMPUTER, DELL LATITUDE C640 NOTEBOOK	$2,711
554909	COMPUTER, DELL LATITUDE C640 NOTEBOOK	$2,893
542113	COMPUTER, DELL LATITUDE C640 NOTEBOOK	$2,966
546528	COMPUTER, DELL LATITUDE C810 NOTEBOOK	$3,216
560606	COMPUTER, DELL LATITUDE C840 NOTEBOOK	$2,373
526657	COMPUTER, DELL LATITUDE CPX NOTEBOOK	$3,052
583031	COMPUTER, DELL LATITUDE D410 NOTEBOOK	$2,057
575861	COMPUTER, DELL LATITUDE D600 NOTEBOOK	$2,704
561000	COMPUTER, DELL LATITUDE D600 NOTEBOOK	$2,776
567824	COMPUTER, DELL LATITUDE D600 NOTEBOOK	$2,851
	COMPUTER, DELL LATITUDE D610 NOTEBOOK	$2,693
539454	COMPUTER, DELL LATITUDE L400 NOTEBOOK	$2,351
500761	COMPUTER, DELL LATITUDE NOTEBOOK	$4,445
562169	COMPUTER, DELL LATITUDE X200 NOTEBOOK	$1,943
557997	COMPUTER, DELL LATITUDE X200 NOTEBOOK	$2,131
554299	COMPUTER, DELL LATITUDE X200 NOTEBOOK	$2,519
500181	COMPUTER, DELL NOTEBOOK	$4,094
502582	COMPUTER, DELL NOTEBOOK	$5,661
	COMPUTER, DELL OPTIPLEX 170L	$1,159
474267	COMPUTER, DELL OPTIPLEX 466/LE	$2,944
512887	COMPUTER, DELL OPTIPLEX G1	$1,449
561663	COMPUTER, DELL OPTIPLEX GX 260	$2,050
529298	COMPUTER, DELL OPTIPLEX GX1	$1,522
522982	COMPUTER, DELL OPTIPLEX GX1	$3,000
531373	COMPUTER, DELL OPTIPLEX GX1	$3,000
538038	COMPUTER, DELL OPTIPLEX GX1 (W/SOFTWARE)	$6,849
542116	COMPUTER, DELL OPTIPLEX GX240	$1,409
553876	COMPUTER, DELL OPTIPLEX GX240	$1,807
551434	COMPUTER, DELL OPTIPLEX GX240	$1,937
553561	COMPUTER, DELL OPTIPLEX GX240	$2,063
552950	COMPUTER, DELL OPTIPLEX GX240	$2,220
545407	COMPUTER, DELL OPTIPLEX GX240	$2,741
570403	COMPUTER, DELL OPTIPLEX GX270	$1,839
578288	COMPUTER, DELL OPTIPLEX GX270	$2,800
578289	COMPUTER, DELL OPTIPLEX GX270	$2,800
576915	COMPUTER, DELL OPTIPLEX GX280	$1,465
549618	COMPUTER, DELL OPTIPLEX GX400	$1,130
547199	COMPUTER, DELL OPTIPLEX GX400	$2,179
538277	COMPUTER, DELL OPTIPLEX GX400	$3,048
575237	COMPUTER, DELL OPTIPLEX GX60	$1,190
575238	COMPUTER, DELL OPTIPLEX GX60	$1,326
	COMPUTER, DELL OPTIPLEX GX620	$1,244
522015	COMPUTER, DELL POWEREDGE 1300	$1,871
534766	COMPUTER, DELL POWEREDGE 1400	$2,104

521849	COMPUTER, DELL POWEREDGE 2300 VIDEO	$4,412
576661	COMPUTER, DELL POWEREDGE 4600	$6,601
575568	COMPUTER, DELL POWEREDGE 4600	$10,506
542304	COMPUTER, DELL POWEREDGE 6400	$8,216
577958	COMPUTER, DELL POWEREDGE SC420	$2,056
577899	COMPUTER, DELL POWEREDGE SC420	$2,940
522201	COMPUTER, DELL POWERVAULT 740N	$52,311
522273	COMPUTER, DELL PRECISION 210	$2,407
539533	COMPUTER, DELL PRECISION 330	$3,089
539488	COMPUTER, DELL PRECISION 330	$4,104
548793	COMPUTER, DELL PRECISION 340	$1,566
557816	COMPUTER, DELL PRECISION 340	$1,572
557817	COMPUTER, DELL PRECISION 340	$1,572
547528	COMPUTER, DELL PRECISION 340	$1,635
545927	COMPUTER, DELL PRECISION 340	$2,287
545926	COMPUTER, DELL PRECISION 340	$2,287
552947	COMPUTER, DELL PRECISION 340	$3,165
567672	COMPUTER, DELL PRECISION 360N	$1,699
512106	COMPUTER, DELL PRECISION 410	$2,793
512107	COMPUTER, DELL PRECISION 410	$3,172
515920	COMPUTER, DELL PRECISION 410	$5,467
512651	COMPUTER, DELL PRECISION 410	$5,612
509087	COMPUTER, DELL PRECISION 410	$5,910
520363	COMPUTER, DELL PRECISION 410 (NOT TAGGED)	$5,544
520362	COMPUTER, DELL PRECISION 410 (NOT TAGGED)	$5,544
534014	COMPUTER, DELL PRECISION 420	$4,217
536500	COMPUTER, DELL PRECISION 420	$5,082
579775	COMPUTER, DELL PRECISION 470	$2,989
556907	COMPUTER, DELL PRECISION 530	$2,200
550623	COMPUTER, DELL PRECISION 530	$3,171
543134	COMPUTER, DELL PRECISION 530	$4,062
546523	COMPUTER, DELL PRECISION 530	$5,220
550048	COMPUTER, DELL PRECISION 530	$6,672
553442	COMPUTER, DELL PRECISION 530	$7,184
550045	COMPUTER, DELL PRECISION 530	$8,192
550046	COMPUTER, DELL PRECISION 530	$8,192
550047	COMPUTER, DELL PRECISION 530	$8,192
519558	COMPUTER, DELL PRECISION 610	$5,466
515210	COMPUTER, DELL PRECISION 610	$7,039
515922	COMPUTER, DELL PRECISION 610	$9,328
520364	COMPUTER, DELL PRECISION 610 (NOT TAGGED)	$7,413
526672	COMPUTER, DELL PRECISION 620	$5,301
488426	COMPUTER, DELL XPS P166S	$3,233
492768	COMPUTER, DELL XPS PRO 200N	$5,428
463705	COMPUTER, DELL XPS466V	$4,180

499423	COMPUTER, DIGITAL VENTURIS FX 5166	$2,501
499422	COMPUTER, DIGITAL VENTURIS FX 5200S	$2,874
553930	COMPUTER, GATEWAY 450SX4 NOTEBOOK (2)	$1,621
553929	COMPUTER, GATEWAY 450SX4 NOTEBOOK (2)	$1,621
453188	COMPUTER, GATEWAY 486/33DXC	$3,441
462110	COMPUTER, GATEWAY 4DX2-66V	$4,744
555832	COMPUTER, GATEWAY 500S	$1,159
554953	COMPUTER, GATEWAY 500X	$1,159
554952	COMPUTER, GATEWAY 500X	$1,159
553689	COMPUTER, GATEWAY 700X	$4,699
498587	COMPUTER, GATEWAY E-3000	$2,504
515940	COMPUTER, GATEWAY E-4200	$1,281
561476	COMPUTER, GATEWAY E-6000	$2,038
562195	COMPUTER, GATEWAY E-6000	$2,205
555075	COMPUTER, GATEWAY E-6000	$2,584
570188	COMPUTER, GATEWAY E-6100-C	$1,670
499710	COMPUTER, GATEWAY G6-266	$2,713
500557	COMPUTER, GATEWAY GP6-266	$2,784
533760	COMPUTER, GATEWAY GP7-450	$1,100
518977	COMPUTER, GATEWAY GP7-500	$3,093
569870	COMPUTER, GATEWAY M350WVN NOTEBOOK	$1,299
569869	COMPUTER, GATEWAY M350WVN NOTEBOOK	$1,299
569868	COMPUTER, GATEWAY M350WVN NOTEBOOK	$1,299
587034	COMPUTER, GATEWAY M460E NOTEBOOK	$1,070
493762	COMPUTER, GATEWAY NOTEBOOK	$3,693
492410	COMPUTER, GATEWAY NOTEBOOK	$3,808
482066	COMPUTER, GATEWAY P5-120	$2,729
488934	COMPUTER, GATEWAY P5-133	$2,355
481377	COMPUTER, GATEWAY P5-90	$2,571
488711	COMPUTER, GATEWAY SOLO NOTEBOOK	$2,924
507608	COMPUTER, GENERIC	$1,400
507609	COMPUTER, GENERIC	$1,450
507610	COMPUTER, GENERIC	$1,450
478772	COMPUTER, GENERIC	$4,000
524041	COMPUTER, HEWLETT PACKARD VECTRA VLI8 (NOT TAGGED)	$4,845
502414	COMPUTER, HEWLETT PACKARD VECTRA XA	$9,220
582876	COMPUTER, HEWLETT PACKARD XW4200	$2,026
522977	COMPUTER, IBM 300GL	$4,675
522649	COMPUTER, IBM 300GL W/CANBERRA MCA	$6,070
443835	COMPUTER, IBM PS/2 W/CANBERRA 100	$10,965
510218	COMPUTER, IBM TA INSTRUMENTS	$5,000
475906	COMPUTER, MACINTOSH 8100/100 (ERDA)	$4,879
476715	COMPUTER, MACINTOSH 8100/100 (ERDA)	$5,852
540151	COMPUTER, MACINTOSH G3	$4,000
514643	COMPUTER, MACINTOSH G3 NOTEBOOK	$3,216

526155	COMPUTER, MACINTOSH G4	$2,120
526156	COMPUTER, MACINTOSH G4	$2,120
572470	COMPUTER, MACINTOSH G5	$2,552
459757	COMPUTER, MACINTOSH NOTEBOOK	$4,325
573431	COMPUTER, MACINTOSH POWERBOOK G4 NOTEBOOK	$3,433
487642	COMPUTER, MAXX 486 (INSIDE 488098)	$3,000
493182	COMPUTER, MICRON MILLENNIA	$2,698
493417	COMPUTER, MICRON MILLENNIA LXA	$2,257
496363	COMPUTER, MICRON MILLENNIA LXA	$3,868
499500	COMPUTER, MICRON MILLENNIA MME	$3,280
490989	COMPUTER, MICRON MILLENNIA PLUS	$3,282
482937	COMPUTER, MICRON P120	$4,716
503298	COMPUTER, NEC VERSA 6230 NOTEBOOK	$3,947
449279	COMPUTER, NORTHGATE 325	$4,842
460329	COMPUTER, NORTHGATE 486DX2/66	$2,791
556752	COMPUTER, SONY VAIO NOTEBOOK (2)	$2,356
566709	COMPUTER, SONY VAIO PCG-67IL NOTEBOOK	$1,895
480854	COMPUTER, SUN SPARCSTATION 20	$15,187
474422	COMPUTER, SUN SPARCSTATION 20	$25,561
473694	COMPUTER, SUN SPARCSTATION 20	$28,226
478814	COMPUTER, SUN SPARCSTATION 20	$39,523
498602	COMPUTER, SUN ULTRASPARC 1	$7,154
520033	COMPUTER, SUN ULTRASPARC ENTERPRISE 450	$25,644
476426	COMPUTER, TANGENT PENTIUM	$4,155
446856	COMPUTER, TATUNG TCS-8000	$2,859
571349	COMPUTER, TOSHIBA SATELLITE A45-S120 NOTEBOOK	$1,042
471717	COMPUTER, TOSHIBA T4700CT NOTEBOOK	$5,336
476024	COMPUTER, ZEOS	$3,353
464292	COMPUTER, ZEOS 486	$3,070
485995	CONDENSER, COLUMBUS INSTRUMENTS OXYMAX 10-CHAMBER (2)	$5,321
485994	CONDENSER, COLUMBUS INSTRUMENTS OXYMAX 10-CHAMBER (2)	$5,321
566718	CONFLO II INTERFACE, FINNIGAN MAT	$8,260
500543	COPIER, CANON 6016	$1,532
512832	COPIER, CANON 950 #4706P COLOR LASER (2)	$40,080
448333	COPIER, CANON NP-1020	$1,345
491868	COPIER, CANON NP6025	$3,450
580605	COPIER, MINOLTA DI 2510	$3,929
533684	COPIER, SHARP SF-2540	$4,704
525377	CRYOBIOLOGICAL STORAGE SYSTEM, THERMOLYNE LOCATOR JR. (NOT TAGGED)	$3,118
525378	CRYOBIOLOGICAL STORAGE SYSTEM, THERMOLYNE LOCATOR JR. (NOT TAGGED)	$3,118
587133	CRYOBIOLOGICAL STORAGE UNIT, THERMOLYNE LOCATOR JR.	$3,059

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490393	D GENE SYSTEM, BIO-RAD ELECTROPHORESIS	$4,973
498561	DATA LINK, PACIFIC CREST UHF (3) (CASE)	$6,325
424863	DATALOGGER, ELECTRO/GENERAL 1002-48 DATAMYTE	$3,137
424862	DATALOGGER, ELECTRO/GENERAL 1002-48 DATAMYTE	$3,196
537474	DCODE SYSTEM, BIO-RAD MUTATION DETECTION	$4,924
553759	DETECTOR CONTROLLER, PRINCETON ST-138S	$5,000
482590	DETECTOR, PRINCETON LN/CCD-1024TKB/1 (3)	$67,892
451786	DEW POINT GENERATOR, LI-COR LI-610 PORTABLE	$3,750
506082	DEWAR, ISS 90031	$7,028
553744	DIGITABLET, MICROCOMP	$1,200
524070	DIGITIZING TABLET, CALCOMP III (2) (NOT TAGGED)	$6,204
424880	DIGITIZING TABLET, JANDEL 2210	$1,195
553758	DISKPACK, SUN 2.1GB	$1,054
447377	DISPLAY SYSTEM, NOMADIC MAGNETIC	$6,060
560475	DISSOLVED INORG CARBON ANALYZER, APOLLO SCITECH AS-C2	$29,000
458995	DISTANCE MEASURER, TOPCON DM-S2 ELECTRONIC	$3,983
521473	DISTANCE MEASURER, TOPCON GTS-300	$10,177
425361	DISTANCE METER, TOPCON DM-A2 ELECTRONIC	$3,089
548548	DOCUMENT MANAGEMENT SYSTEM, CANON CD-4050 (2)	$8,900
517912	DRAWING TUBE, ZEISS	$4,641
425363	DRILLING/MILLING MACHINE, EMCO FB-2	$4,400
586745	DROP SHAPE ANALYSIS SYSTEM, KRUSS DSA100S	$25,161
503317	DSU/CSU, ADC KENTROX DATASMART 761 T1 DUAL PORT	$1,968
545530	DUAL SAMPLE CELL, TA INSTRUMENTS	$4,111
485242	ELECTROFISHER, SMITH-ROOT 15-C POW BACKPACK	$3,521
500960	ELECTROFISHER, SMITH-ROOT GPP 2.5 (2)	$4,824
446529	ELECTROPHORESIS APPARATUS, BIO-RAD CHEF-DR II (4)	$4,726
515768	ELECTROPHORESIS APPARATUS, BIO-RAD CHEF-DR III (4)	$16,102
543041	ELEMENTAL ANALYZER, CE ELANTECH NC2500	$29,230
518029	ELUENT GENERATOR, DIONEX EG40	$7,645
435862	ENDOSCOPE, R. WOLF SMALL JOINT (9)	$8,290
475317	ENVIRONMENTAL CHAMBER, REVCO RI-50-555-ABA	$7,722
486006	EVAPORATION SYSTEM, LABCONCO RAPIDVAP N2	$5,943
578242	EVAPORATOR, ORGANOMATION ASSOC N-EVAP 112 NITROGEN 24-POS	$3,768
475549	EXPANSION INTERFACE, COLUMBUS INSTRUMENTS OXYMAX	$11,795
464606	EXPANSION INTERFACE, COLUMBUS INSTRUMENTS OXYMAX (2)	$9,669
424092	EXTRACTION SYSTEM, TECATOR SOXTEC HT	$6,900
554774	EXTRACTION UNIT, TECATOR SOXTEC 1045	$5,840
425366	EXTRACTION UNIT, TECATOR SOXTEC H2 1045	$4,916
425367	EXTRACTION UNIT, TECATOR SOXTEC H2 1045	$4,916
425368	EXTRACTION UNIT, TECATOR SOXTEC H2 1045	$4,916
452808	EXTRACTION UNIT, TECATOR SOXTEC HT 1043	$9,433
554776	EXTRACTION UNIT, TECATOR SOXTEC HT 1045	$5,840

554773	EXTRACTION UNIT, TECATOR SOXTEC HT 1045	$7,360
500957	FACSIMILE, PANASONIC PANAFAX UF-560	$1,470
542133	FACSIMILE, PANASONIC PANAFAX UF-890	$1,895
570622	FACSIMILE, PANASONIC PANAFAX UF-890	$1,895
469429	FILING SYSTEM, CANON CF-250 OPTICAL DISK	$15,840
451879	FILM RECORDER, GCC FR12382	$4,559
458513	FILM RECORDER, POLAROID CI-5000 DIGITAL PALETTE	$4,599
520572	FILM SCANNER, NIKON LS 2000	$1,808
514487	FILM SCANNER, NIKON LS 2000	$1,935
513108	FILM SCANNER, NIKON LS 2000	$1,969
515315	FILM SCANNER, NIKON LS 2000	$2,324
558288	FILM SCANNER, NIKON SUPER COOLSCAN 4000ED	$1,501
551143	FILM SCANNER, NIKON SUPER COOLSCAN LS4000	$1,570
547968	FISH BREEDING SYSTEM, BENCHTOP Z-PLEX	$4,276
510304	FLOW HOOD, FORMA SCIENTIFIC 1828 LAMINAR AIR BENCHTOP	$3,454
553751	FLOW INJECTION SYSTEM, PERKIN ELMER FIAS-100	$8,255
553755	FLUORESCENCE DETECTOR, DIONEX FDM-2	$6,900
567567	FLUORESCENCE DETECTOR, LAB ALLIANCE LC305	$7,976
444502	FLUOROMETER, TURNER 112 DIGITAL	$3,906
SRO5805	FORKLIFT, CLARK GCX15E	$15,791
SRO7333	FORKLIFT, FORD MASTER CRAFT MC5953	$34,999
517302	FRACTIONATOR, FFFRACTIONATION F-1000 UNIVERSAL	$7,140
519397	FRACTIONATOR, FFFRACTIONATION S-101 PARTICLE/COLLOID	$54,305
467187	FREEZE DRYER, LABCONCO	$3,551
450194	FREEZE DRYER, LABCONCO	$8,848
481590	FREEZE DRYER, LABCONCO 12L (2)	$6,759
451218	FREEZE DRYER, LABCONCO LYPH-LOCK 4.5L	$3,455
447778	FREEZER, BAXTER SCIENTIFIC C1450 CRYO-FRIDGE	$3,118
451392	FREEZER, INTERNATIONAL COLD STORAGE AE26-60 WALK-IN	$6,031
450395	FREEZER, INTERNATIONAL COLD STORAGE AE26-75 WALK-IN	$6,031
450396	FREEZER, INTERNATIONAL COLD STORAGE AE26-75 WALK-IN	$6,031
451138	FREEZER, REVCO ULT1375-3-AUA ULTRACOLD	$4,990
451359	FREEZER, REVCO ULT1375-3-AUA ULTRACOLD	$4,990
577294	FREEZER, REVCO ULT1386-9-A36 ULTRACOLD	$7,606
475609	FREEZER, REVCO ULT1786-5-A12 ULTRACOLD	$7,603
461288	FREEZER, REVCO ULT2175-5-ABA ULTRACOLD	$6,739
520893	FREEZER, REVCO ULT2186-3-D30 ULTRACOLD (NOT TAGGED)	$6,074
481317	FREEZER, REVCO ULT2186-5-A12 ULTRACOLD	$6,384
490942	FREEZER, REVCO ULT2186-5-A14 ULTRACOLD	$6,283
495352	FREEZER, REVCO ULT2186-5-A14 ULTRACOLD	$6,472
501618	FREEZER, REVCO ULT2186-5-A14 ULTRACOLD	$6,472
557829	FREEZER, REVCO ULT2186-9-A35 ULTRACOLD	$7,723
556742	FREEZER, VWR 5463 UPRIGHT	$6,664
556741	FREEZER, VWR 5478 CHEST	$5,860
468299	FREEZER, VWR REVCO A8520 ULTRACOLD	$6,605

542134	FREEZER/MILL, SPEX CERTIPREP 6750	$4,100
451053	FURNACE, THERMOLYNE 30400	$3,603
563184	FURNACE, THERMOLYNE 79300 TUBE	$3,685
458569	GAMMA PROBE, REXON 3PX3-3 W/NAI DETECTOR	$3,450
488098	GAMMA SPECTROMETER, CHANGER LAB 100	$62,450
584796	GAS ANALYZER, SENTE FIS GS-19S METHANE	$26,021
566717	GAS BENCH II INTERFACE, THERMOQUEST DELTA/MAT252	$26,240
424945	GAS CHROMATOGRAPH, HEWLETT PACKARD 5890A	$14,694
468430	GAS CHROMATOGRAPH, HEWLETT PACKARD 5890A	$16,244
424944	GAS CHROMATOGRAPH, HEWLETT PACKARD 5890A	$25,103
545629	GAS CHROMATOGRAPH, PERKIN ELMER AUTO SYSTEM XL	$20,483
545630	GAS CHROMATOGRAPH, PERKIN ELMER AUTO SYSTEM XL	$30,775
545625	GAS CHROMATOGRAPH, PERKIN ELMER AUTO SYSTEM XL	$31,538
553723	GAS MIXER, ADC GM 602	$3,380
527965	GAS RESPIROMETER, COLUMBUS INSTRUMENTS OXYMAX ER-10	$25,049
470162	GATED INTEGRATOR/BOXCAR AVERAGER, SRS SR250	$3,005
464350	GATED INTEGRATOR/BOXCAR AVERAGER, SRS SR250 (4)	$6,133
560880	GEL ANALYSIS SYSTEM, ALPHA IMAGER 3400 (5)	$14,980
560881	GEL ANALYSIS SYSTEM, ALPHA IMAGER 3400 (5)	$14,980
578218	GENEAMP PCR SYSTEM, APPLIED BIOSYSTEMS 9700	$9,053
578219	GENEAMP PCR SYSTEM, APPLIED BIOSYSTEMS 9700	$9,053
498379	GENEAMP PCR SYSTEM, PERKIN ELMER 9600	$8,002
SRO7828	GENERATOR, BURCO GENSET 55KW W/TRAILER	$18,894
SRO7903	GENERATOR, CUMMINS DGDK-5567916 DIESEL	$17,551
SRO7844	GENERATOR, KOHLER 150ROZJ61	$43,500
SRO7732	GENERATOR, ONAN 125DGEA	$26,734
SRO7733	GENERATOR, ONAN 50DGCAL31640A (EP 772-25B-20803)	$0
SRO7274	GENERATOR, YAMAHA EF5000DVE PORTABLE	$1,719
578276	GENETIC ANALYZER, APPLIED BIOSYSTEMS 3130XL	$170,337
546657	GERMANIUM DETECTOR, CANBERRA (2)	$12,090
464171	GERMANIUM DETECTOR, CANBERRA GC1519 PORTABLE	$9,673
SRO9029	GOLF CART, E-Z-GO	$2,532
SRO9045	GOLF CART, E-Z-GO XT-500	$3,790
525956	GPS SURVEYOR, TRIMBLE 4600LS	$3,216
525481	GPS SURVEYOR, TRIMBLE 4600LS	$3,341
511719	GPS SURVEYOR, TRIMBLE TSCI PRO XR MAPPING (UNIT 1)	$13,434
511720	GPS SURVEYOR, TRIMBLE TSCI PRO XR MAPPING (UNIT 2)	$13,434
451710	GPS, MAGELLAN NAV 5000 PRO	$4,250
451711	GPS, MAGELLAN NAV 5000 PRO	$4,250
489476	GPS, TRIMBLE GEO EXPLORER II	$3,340
489477	GPS, TRIMBLE GEO EXPLORER II	$3,340
554190	GPS, TRIMBLE GEO EXPLORER II	$3,574
573654	GPS, TRIMBLE GEO XT	$3,911
523105	GPS, TRIMBLE PATHFINDER PRO XRS (NOT TAGGED)	$10,995
522027	GPS, TRIMBLE PATHFINDER PRO XRS (NOT TAGGED)	$16,090

473463	GPS, TRIMBLE PRO XL (UNIT 1)	$11,574
503441	GPS, TRIMBLE PRO XL (UNIT 2)	$14,126
553753	GRADIENT PUMP, DIONEX GP40	$13,800
553754	GRADIENT PUMP, DIONEX GP40	$13,800
518028	GRADIENT PUMP, DIONEX GP50	$13,800
423409	GROWTH CHAMBER, EGC M-12 (G1)	$13,219
423410	GROWTH CHAMBER, EGC M-12 (G2)	$13,219
423411	GROWTH CHAMBER, EGC M-12 (G3)	$18,531
424952	GROWTH CHAMBER, EGC M-12 (G4)	$12,910
456688	GROWTH CHAMBER, EGC M-75 WALK-IN	$59,975
515118	HARD DISK, SUN ULTRA SCSI 9.1GB	$1,069
499040	HARD DRIVE, SUN 4.2GB	$1,828
498603	HARD DRIVE, SUN 4GB	$1,040
522980	HARD DRIVE, SUN ULTRASCSI 18.2GB 7200 RPM	$1,676
493627	HARD DRIVE, SUN X5204A 4.2GB	$1,055
493561	HARD DRIVE, SUN X5204A 4.2GB	$1,092
490226	HEADSPACE SAMPLER, HEWLETT PACKARD 7694	$18,303
529971	HELIX DNA SYSTEM, VARIAN (7)	$79,905
424963	HYDROPROBE, CPN 503-1.5 (W/SOURCE)	$3,900
469962	IMAGING SYSTEM, DECAGON AGVISION (4)	$7,285
490946	INCUBATOR, NEW BRUNSWICK INNOVA 4080 SHAKING	$4,999
481324	INCUBATOR, PERCIVAL SCIENTIFIC I-37LLVL	$9,870
481325	INCUBATOR, PERCIVAL SCIENTIFIC I-37LLVL	$9,870
481326	INCUBATOR, PERCIVAL SCIENTIFIC I-37LLVL	$9,870
481327	INCUBATOR, PERCIVAL SCIENTIFIC I-37LLVL	$9,870
424972	INCUBATOR, PRECISION	$3,172
424978	INFRARED GAS ANALYSIS SYSTEM, ADC 225 (3)	$11,870
501089	INTEGRATED ACCESS SYSTEM, AMX AXCENT2	$3,190
492533	INTEGRATED ACCESS SYSTEM, AMX AXCENT2	$7,105
553741	INTEGRATING SPHERE, LI-COR 1800-12 (2)(BLACK CASE)	$3,900
519919	ION ANALYZER, OI ANALYTICAL ALPKEM FS3000 (2)	$27,595
475872	ION CHROMATOGRAPH, DIONEX (7)	$57,437
461619	IONIZATION CHAMBER, REUTER-STOKES RSS-112 (3)	$13,000
425377	KNIFE SHARPENER, REICHERT 903 MICROTOME	$3,540
499424	LAB GAS GENERATOR, WHATMAN 74-5041	$5,144
447177	LAMINATOR, USI ARL-27MR	$1,199
493694	LAMP, QUANTUM DUAL HYBRID QB1205LI-450-670 (3)(2 CASES)	$4,610
465967	LAPROSCOPE, RICHARD WOLF	$9,373
544173	LASER ABLATION SYSTEM, NEW WAVE UP-213 (2)	$100,752
498563	LASER GUN, LASER TECHNOLOGY CRITERION 400	$9,730
523106	LASER GUN, LASER TECHNOLOGY CRITERION 400 (NOT TAGGED)	$5,039
507545	LASER, SPECTRA PHYSICS ND:YAG GCR-270 (3)	$104,804
466872	LATHE, JET 1240PD	$7,446
SRO7451	LAWN MOWER, JOHN DEERE 430 TRACTOR	$7,008
SRO5190	LAWN MOWER, JOHN DEERE F935 FRONT	$8,125

SRO7479	LAWN MOWER, SNAPPER SR140 RIDING	$1,750
546656	LEAD SHIELD, CANBERRA	$7,552
471381	LEAD SHIELD, GAMMA G-12 "LITTLE JOE"	$6,920
448353	LEAD SHIELD, MARINELLI G-3000 "HOSS" (W/SAMPLE CHANGER)	$50,390
544450	LEAF CHAMBER FLUOROMETER, LI-COR 6400-40 (ON 501196B)	$7,870
501084	LECTERN, TAVS (2)	$6,855
452124	LENS, LEICA 60MM F/2.8 MACRO (BOX)	$2,072
424989	LENS, NIKON 50-300MM	$1,400
434235	LENS, NIKON 600MM F/5.6 ED	$2,950
451443	LENS, NIKON 8MM F/2.8 FISHEYE	$1,375
446825	LEVELING SYSTEM, SPECTRA-PHYSICS LASERPLANE (5)	$3,191
465968	LIGHT SOURCE, RICHARD WOLF 5150.001 (5)	$8,673
502413	LIQUID CHROMATOGRAPH, HEWLETT PACKARD 1100 (5)	$38,909
545624	LIQUID CHROMATOGRAPH, PERKIN ELMER HP (4)	$37,976
509660	LIQUID HANDLER, GILSON 215	$13,073
464443	LIQUID SCINTILLATION ANALYZER, PACKARD 2550TR/RB	$32,540
459100	LIQUID SCINTILLATION COUNTER, PACKARD TRI-CARB B4430	$21,964
424995	LIVING STREAM, FRIGID UNIT DI-100 (13)	$7,035
484757	LYTLE DETECTOR, EXAFS	$14,868
426444	MAG CHANGER, LEITZ 512683 INTERMEDIATE W/4 LENSES	$3,494
586150	MAGNET SYSTEM, MAGNEX 3T/160	$43,000
425372	MASS SELECTIVE DETECTOR, HP 5970	$38,887
498532	MASS SPECTROMETER, BRUKER APEX II FTMS FOURIER TRANSFORM	$441,775
566719	MASS SPECTROMETER, FINNIGAN DELTA PLUS ISOTOPE RATIO	$24,600
471286	MASS SPECTROMETER, HEWLETT PACKARD 5972A (2)	$32,260
538042	MASS SPECTROMETER, PERKIN ELMER 6100 DRC ICP (3)	$143,364
424999	MEASURING MACHINE, HENSON BIMM 3A (3)	$6,434
535873	MERCURY ANALYZER, MILESTONE MLS DMA-80 DIRECT (2)	$29,950
425016	MICROBALANCE, CAHN C-31	$6,138
501200	MICRODISPENSER, ROBBINS SCIENTIFIC HYDRA 96	$19,362
430121	MICROFILM READER/PRINTER, CANON NP 780 (8)	$14,712
522032	MICROMILL, MERCHANTEK (2)	$28,726
502031	MICROSCOPE STAGE CONTROLLER, LANG MCL-2	$11,565
481616	MICROSCOPE, LEICA MZ8	$4,853
425045	MICROSCOPE, LEITZ DIALUX 22 COMPOUND	$13,451
425046	MICROSCOPE, LEITZ LABOVERT	$10,449
469259	MICROSCOPE, NANOSCOPE III ATOMIC FORCE (4)	$100,970
478930	MICROSCOPE, NICOLET IR (2)	$77,898
499425	MICROSCOPE, NICOLET MICRORAMAN ACCESSORY (2)	$55,978
479193	MICROSCOPE, NIKON DIAPHOT 200 INVERTED (3)	$21,999
460820	MICROSCOPE, NIKON DIAPHOT INVERTED	$15,199

441460	MICROSCOPE, NIKON MICROPHOT FXA (5)	$42,738
521676	MICROSCOPE, OLYMPUS B-MAX 40 (NOT TAGGED)	$11,038
521677	MICROSCOPE, OLYMPUS B-MAX 40 (NOT TAGGED)	$11,038
546354	MICROSCOPE, OLYMPUS BX41TF POLARIZING	$11,674
576974	MICROSCOPE, OLYMPUS BX61 FLUORESCENCE/DIC/IMAGING (7)	$64,236
425049	MICROSCOPE, WILD M20 PHASE	$3,864
425050	MICROSCOPE, WILD M3 ZOOM	$4,475
513697	MICROSCOPE, ZEISS 16 COMPOUND	$5,290
469045	MICROSCOPE, ZEISS AXIOSKOP 50 COMPOUND	$25,185
519948	MICROSCOPE, ZEISS INVERTOSCOPE INVERTED (NOT TAGGED)	$5,246
485237	MICROSENSOR, DIAMOND GENERAL 1231	$6,150
425392	MICROTOME, CAMBRIDGE 860	$4,980
449200	MICROTOME, REICHERT-JUNG 2040	$8,683
558428	MICROWAVE DIGESTION SYSTEM, CEM MARS 5 IP 907005	$26,595
578854	MICROWAVE DIGESTION SYSTEM, CEM MARS XPRESS	$23,305
553186	MICROWAVE DIGESTION SYSTEM, CEM STAR 6	$29,938
453586	MICROWAVE SAMPLE PREP SYSTEM, CEM MDS-2000	$15,062
471057	MICROWAVE SAMPLE PREP SYSTEM, CEM MDS-2000	$19,218
489726	MILL, FRITSCH PLANETARY BALL	$18,796
451442	MILL, THOMAS SCIENTIFIC WILEY	$3,400
499931	MILL, THOMAS SCIENTIFIC WILEY 3379-K25	$11,500
521152	MILL, THOMAS SCIENTIFIC WILEY MODEL 4 3379-E10	$10,888
	MINI-SAMPLER, HARRICK MVP 2 STAR	$4,999
492535	MIXER/POWER AMPLIFIER, GENTNER MPA II	$3,995
501092	MIXER/POWER AMPLIFIER, GENTNER MPAII	$3,323
501093	MIXER/POWER AMPLIFIER, GENTNER MPAII	$3,323
492534	MIXER/POWER AMPLIFIER, GENTNER MPAII	$3,995
448737	MIXER/RECORDER, TASCAM MIDISTUDIO 644	$1,341
545531	MODULE INTERFACE, DUPONT INSTRUMENTS	$8,057
578465	MODULE, CABLETRON EMME (NOT TAGGED)	$5,788
484018	MODULE, CABLETRON TPMIM-34	$1,895
578463	MODULE, CABLETRON TPMIM-34	$1,895
578464	MODULE, CABLETRON TPMIM-34	$1,895
498571	MODULE, CABLETRON TPRMIM-36 (#1)	$3,785
555201	MONITOR, DELL 19" FLAT PANEL	$1,017
566654	MONITOR, DELL 20" FLAT PANEL	$1,049
547056	MONITOR, DELL 20" FLAT PANEL	$1,351
547429	MONITOR, DELL 20" FLAT PANEL	$1,351
545702	MONITOR, DELL 20" FLAT PANEL	$1,356
549412	MONITOR, DELL 20" FLAT PANEL	$1,545
520360	MONITOR, DELL 21"	$1,230
492415	MONITOR, DIGITAL PCXAV-ZB 21"	$2,133
499711	MONITOR, GATEWAY VIVITRON 20"	$1,150
474083	MONITOR, IDEKLIYAMA MF-8617 17"	$1,100

577188	MONITOR, KDS	$1,075
501095	MONITOR, MITSUBISHI 35"	$2,212
501096	MONITOR, MITSUBISHI 35"	$2,212
501097	MONITOR, MITSUBISHI 35"	$2,212
501098	MONITOR, MITSUBISHI 35"	$2,212
491057	MONITOR, MITSUBISHI CS-35205A 35"	$2,234
491058	MONITOR, MITSUBISHI CS-35205A 35"	$2,234
491059	MONITOR, MITSUBISHI CS-35205A 35"	$2,234
491060	MONITOR, MITSUBISHI CS-35205A 35"	$2,234
500052	MONITOR, NEC JC-2144UMA	$1,270
464639	MONITOR, NEC MULTISYNC 5FGE	$1,310
490273	MONITOR, NEC MULTISYNC XE 21"	$1,849
475219	MONITOR, NEC MULTISYNC XE21	$2,090
543642	MONITOR, PHILIPS 180P 18" FLAT PANEL	$1,232
543643	MONITOR, PHILIPS 180P 18" FLAT PANEL	$1,232
540305	MONITOR, PHILIPS 180P 18" FLAT PANEL	$1,235
538650	MONITOR, PLANAR 18" FLAT PANEL	$1,326
548003	MONITOR, PLANAR 19" FLAT PANEL	$1,059
486206	MONITOR, SILICON GRAPHICS GDM-20E21	$3,000
491207	MONITOR, SONY MULTISCAN 20SFII 20"	$1,529
545564	MONITOR, SONY TRINITRON	$1,000
545565	MONITOR, SONY TRINITRON PVM-1343MD VIDEO	$1,200
550069	MONITOR, SONY" 24" MULTISCAN	$2,066
550601	MONITOR, SONY" 24" MULTISCAN	$2,066
550602	MONITOR, SONY" 24" MULTISCAN	$2,066
550603	MONITOR, SONY" 24" MULTISCAN	$2,066
470480	MONITOR, SUN 17"	$1,500
484436	MONITOR, SUN 20"	$1,200
474082	MONITOR, SUN 20"	$2,000
474088	MONITOR, SUN 20"	$2,000
478860	MONITOR, SUN 20"	$2,000
497976	MONITOR, SUN 20"	$2,000
514620	MONITOR, VIEWSONIC P815 21"	$1,124
552468	MUFFLE FURNACE, BARNSTEAD/THERMOLYNE 6000	$3,019
531390	MULTI-CHAMBER AIR SUPPLY SYSTEM, COLUMBUS INSTRUMENTS	$7,000
520694	MULTI-CHANNEL ANALYZER, PGT QUANTUM MCA 2100R	$3,720
509159	MULTI-CHANNEL SCALER, STANFORD RESEARCH SR430	$8,000
542719	MULTI-DISK PACK, SUN 8.4GB	$3,127
454526	MULTIPORT REPEATER, DIGITAL THINWIRE ETHERNET	$2,835
565754	MULTIPROBE SYSTEM, YSI 556 MPS (BLACK CASE)	$3,429
464280	NUCLEAR INFORMATION PROCESSOR, CANBERRA (3)	$9,115
458568	NUCLEAR INFORMATION PROCESSOR, SILENA SNIP 204G	$4,995
515316	ORGANIC CARBON ANALYZER, SHIMADZU TOC-5000A (2)	$24,996
466194	OSCILLOSCOPE, TEKTRONIX 11402A DIGITIZING (2)	$18,203
516471	OSCILLOSCOPE, TEKTRONIX TDS680C	$13,476

458070	OSMOMETER, WESCOR 5500 VAPOR PRESSURE	$4,025
SRO7901	OUTBOARD MOTOR, EVINRUDE 15HP	$1,205
SRO7904	OUTBOARD MOTOR, EVINRUDE 20HP	$1,340
SRO7905	OUTBOARD MOTOR, EVINRUDE 40HP	$2,205
SRO7520	OUTBOARD MOTOR, EVINRUDE 70HP	$6,405
SRO7900	OUTBOARD MOTOR, EVINRUDE 9.9HP	$1,104
SRO7527	OUTBOARD MOTOR, JOHNSON 15HP	$1,322
SRO7542	OUTBOARD MOTOR, JOHNSON 25HP	$2,154
SRO7526	OUTBOARD MOTOR, JOHNSON 9.9HP	$1,209
SRO7530	OUTBOARD MOTOR, JOHNSON 9.9HP	$1,650
SRO7523	OUTBOARD MOTOR, JOHNSON 9.9HP	$1,900
SRO7906	OUTBOARD MOTOR, MERCURY 25HP	$1,594
SRO7912	OUTBOARD MOTOR, MERCURY 40HP	$2,522
SRO5833	OUTBOARD MOTOR, MERCURY 90HP 4-STROKE SALTWATER	$5,360
SRO7511	OUTBOARD MOTOR, VANGUARD 23HP V-TWIN ELECTRIC	$3,220
SRO5861	OUTBOARD MOTOR, YAMAHA 100HP 4-STROKE	$9,000
SRO7508	OUTBOARD MOTOR, YAMAHA 25HP	$2,784
SRO7533	OUTBOARD MOTOR, YAMAHA 9.9HP	$1,595
SRO7522	OUTBOARD MOTOR, YAMAHA 90HP	$4,300
SRO7902	OUTBOARD MOTOR, YAMAHA 90HP	$4,999
553752	OVEN, DIONEX LC30 CHROMATOGRAPHY	$5,750
451085	OVEN, FISHER 838F ISOTEMP	$3,870
434241	OVEN, GRIEVE SC-350	$8,009
492909	OVERHEAD PROJECTOR, DUKANE 28A682 PORTABLE (ERDA)	$3,135
452903	PH METER, RADIOMETER PHM-85-1	$3,128
425088	PHOTOSYNTHESIS SYSTEM, LI-COR LI-6200 (2)	$14,022
425087	PHOTOSYNTHESIS SYSTEM, LI-COR LI-6200 (2)	$15,445
501196	PHOTOSYNTHESIS SYSTEM, LI-COR LI-6400 (2)	$24,523
467959	PLANT ANALYZER, LI-COR LAI-2000 CANOPY (2) (CASE)	$4,310
467960	PLANT ANALYZER, LI-COR LAI-2000 CANOPY (2) (CASE)	$4,310
448738	PLAYBACK SYSTEM, AVL PRO TRAVELER X2	$2,621
499415	PLOTTER, HEWLETT PACKARD 2500CP DESIGN JET	$10,318
520554	PLOTTER, HEWLETT PACKARD C4724A DESIGNJET 3500CP (NO TAG)	$12,565
425106	POROMETER, LI-COR LI-1600M (2) (2 CASES)	$6,322
467231	PRESSURE CHAMBER, PMS 1002	$3,551
471441	PRINTER, APPLE LASERWRITER SELECT 360	$1,344
545567	PRINTER, CANON FILEPRINT 100	$3,000
539715	PRINTER, EPSON P130A STYLUS PRO 9500	$15,451
520981	PRINTER, EPSON P891A STYLUS COLOR 3000 (NOT TAGGED)	$1,602
444941	PRINTER, HEWLETT PACKARD 33440A LASERJET II	$1,225
456772	PRINTER, HEWLETT PACKARD 33449A LASERJET III	$1,404
463745	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,195
462263	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,363
467767	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,573
466235	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,699

470079	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,86
470078	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,86
470077	PRINTER, HEWLETT PACKARD C2001A LASERJET 4	$1,866
463740	PRINTER, HEWLETT PACKARD C2021A LASERJET 4M	$1,63
465748	PRINTER, HEWLETT PACKARD C2021A LASERJET 4M	$1,766
474268	PRINTER, HEWLETT PACKARD C2037A LASERJET 4+	$1,702
492416	PRINTER, HEWLETT PACKARD C2037A LASERJET 4+	$1,998
538041	PRINTER, HEWLETT PACKARD C2037A LASERJET 4PLUS	$3,232
480731	PRINTER, HEWLETT PACKARD C3155A LASERJET 5MP	$1,251
502101	PRINTER, HEWLETT PACKARD C3916A LASERJET 5	$1,525
503436	PRINTER, HEWLETT PACKARD C3916A LASERJET 5	$1,700
502934	PRINTER, HEWLETT PACKARD C3982A LASERJET 6MP	$1,100
499409	PRINTER, HEWLETT PACKARD C3982A LASERJET 6MP	$1,165
521932	PRINTER, HEWLETT PACKARD C4112A LASERJET 5000GN	$2,481
519967	PRINTER, HEWLETT PACKARD C4120A LASERJET 4000N	$1,233
510483	PRINTER, HEWLETT PACKARD C4120A LASERJET 4000N	$1,298
509002	PRINTER, HEWLETT PACKARD C4120A LASERJET 4000N	$1,343
526903	PRINTER, HEWLETT PACKARD C4170A LASERJET 2100XI	$1,109
520344	PRINTER, HEWLETT PACKARD C4253A LASERJET 4050N	$1,268
528061	PRINTER, HEWLETT PACKARD C4253A LASERJET 4050N	$1,422
547905	PRINTER, HEWLETT PACKARD C7061A LASERJET 2200DTN	$1,232
558363	PRINTER, HEWLETT PACKARD Q2425A LASERJET 4200	$1,144
556815	PRINTER, HEWLETT PACKARD Q2434A LASERJET 4300DTN	$2,661
561473	PRINTER, HEWLETT PACKARD Q2475A LASERJET 2300DN	$1,006
550423	PRINTER, MINOLTA QMS MAGICOLOR 2210 LASER COLOR	$2,178
507613	PRINTER, OKIDATA MICROLINE 320	$722
443836	PROCESSOR, CANBERRA 1510 INTEGRATED SIGNAL	$3,400
448484	PROGRAMMER, AVL SUPER GENESIS I/O MULTI-IMAGE	$2,183
448732	PROJECTOR CONTROL MODULE, AVL SUPER DOVE MULTI	$1,571
448733	PROJECTOR CONTROL MODULE, AVL SUPER DOVE MULTI	$1,571
483024	PROJECTOR, INFOCUS SYSTEMS LITE PRO 580 LCD	$7,420
542388	PROJECTOR, INFOCUS SYSTEMS LP350 LCD	$3,798
537842	PROJECTOR, INFOCUS SYSTEMS LP350 LCD	$4,266
521924	PROJECTOR, INFOCUS SYSTEMS LP435Z LCD	$5,221
554109	PROJECTOR, INFOCUS SYSTEMS LP790 LCD W/LENS	$6,443
474050	PULLER SET, POWER TEAM IPS3017 30-TON	$3,750
553760	PULSE GENERATOR, PRINCETON PG-200 PROGRAMMABLE	$4,968
513129	PUMP, EDWARDS EXT70 TURBOMOLECULAR (2)	$3,340
513128	PUMP, EDWARDS EXT70 TURBOMOLECULAR (2)	$3,340
528187	PUMP, ORION SAGE M362 SYRINGE	$3,190
528188	PUMP, ORION SAGE M362 SYRINGE	$3,190
503301	PUMP, SCILOG CHEMTECH FM-420 (3)	$3,665
521799	RACK, DELL (2)	$1,561
527811	RADAR/TRANSMITTER DETECTOR, RECCO 5-917 PORTABLE	$6,495
522979	RADIO, MOTOROLA ASTRO MOBILE VEHICLE (A12547)	$2,020
515730	RADIO, MOTOROLA XTS 3000 (A12514)	$2,377

515732	RADIO, MOTOROLA XTS 3000 (A12526)	$2,377
515733	RADIO, MOTOROLA XTS 3000 (A12527)	$2,377
543238	RADIO, MOTOROLA XTS 3000 (A12528)	$2,377
515736	RADIO, MOTOROLA XTS 3000 (A12530)	$2,377
515737	RADIO, MOTOROLA XTS 3000 (A12531)	$2,377
515738	RADIO, MOTOROLA XTS 3000 (A12532)	$2,377
515739	RADIO, MOTOROLA XTS 3000 (A12533)	$2,377
515740	RADIO, MOTOROLA XTS 3000 (A12534)	$2,377
515741	RADIO, MOTOROLA XTS 3000 (A12535)	$2,377
565309	RADIO, MOTOROLA XTS 3000 (A12536)	$2,377
561702	RADIO, MOTOROLA XTS 3000 (A12537)	$2,377
515744	RADIO, MOTOROLA XTS 3000 (A12538)	$2,377
561703	RADIO, MOTOROLA XTS 3000 (A12539)	$2,377
515746	RADIO, MOTOROLA XTS 3000 (A12540)	$2,377
515747	RADIO, MOTOROLA XTS 3000 (A12541)	$2,377
515748	RADIO, MOTOROLA XTS 3000 (A12542)	$2,377
515749	RADIO, MOTOROLA XTS 3000 (A12543)	$2,377
515750	RADIO, MOTOROLA XTS 3000 (A12544)	$2,377
515751	RADIO, MOTOROLA XTS 3000 (A12545)	$2,377
515752	RADIO, MOTOROLA XTS 3000 (A12546)	$2,377
545036	RADIO, MOTOROLA XTS 3000 (A13839)	$2,421
545037	RADIO, MOTOROLA XTS 3000 (A13840)	$2,421
546068	RADIO, MOTOROLA XTS 3000 (A13856)	$1,712
546069	RADIO, MOTOROLA XTS 3000 (A13857)	$1,712
546071	RADIO, MOTOROLA XTS 3000 (A13859)	$1,712
546072	RADIO, MOTOROLA XTS 3000 (A13860)	$1,712
542162	RADIO, MOTOROLA XTS 3000 (A13895)	$1,641
576574	RADIO, MOTOROLA XTS 5000 (14747)	$2,342
576575	RADIO, MOTOROLA XTS 5000 (14748)	$2,342
576576	RADIO, MOTOROLA XTS 5000 (14749)	$2,342
576577	RADIO, MOTOROLA XTS 5000 (14750)	$2,342
576578	RADIO, MOTOROLA XTS 5000 (14751)	$2,342
576579	RADIO, MOTOROLA XTS 5000 (14752)	$2,342
576580	RADIO, MOTOROLA XTS 5000 (14753)	$2,342
576581	RADIO, MOTOROLA XTS 5000 (14754)	$2,342
576582	RADIO, MOTOROLA XTS 5000 (14755)	$2,342
576583	RADIO, MOTOROLA XTS 5000 (14756)	$2,342
443730	RAPID KINETICS ACCESSORY, HI-TECH SFA-12 (CASE)	$4,450
483964	READOUT UNIT, GEOKON GK-403 (RED)	$3,150
560610	RECEIVER, TRIMBLE BOB	$2,174
557336	REFRIGERATED CIRCULATOR, NESLAB CFT-75	$4,634
481267	REFRIGERATED CIRCULATOR, NESLAB HX-500	$8,235
492417	REFRIGERATED RECIRCULATOR, NESLAB CFT-75	$3,807
569217	REMOTE ACCESS SERVER, PATTON ELECTRONICS 2960 16-PORT	$3,578
498562	REPEATER, TRIMBLE PACIFIC CREST (W/498561) (CASE)	$1,950

456808	REPOSITORY, GAMMA PRODUCTS STEEL	$12,300
456462	RESPIROMETER, COLUMBUS INSTRUMENTS OXYMAX O2/CO2 (5)	$44,726
472307	REVERSE OSMOSIS SYSTEM, BARNSTEAD ROPURE ST D6311	$3,025
1650	RIFLE, CROSSMAN 760 PUMPMASTER AIR .177 CAL.	$100
1648	RIFLE, RUGER 10-22	$300
1649	RIFLE, RUGER 270	$850
SRO7743	ROTOTILLER, TROY-BILT 8211 8HP	$1,667
573547	ROUTER, CISCO 1720 10/100 BASE T MODULAR	$1,987
541983	ROUTER, CISCO 1720 ACCESS	$1,733
545524	ROUTER, CISCO 2501	$3,036
521553	SAFETY CABINET, LABCONCO PURIFIER (NOT TAGGED)	$5,895
521554	SAFETY CABINET, LABCONCO PURIFIER (NOT TAGGED)	$5,895
539717	SAMPLER CONCENTRATOR, TEKMAR DOHRMANN 3100	$11,355
543541	SAMPLER CONCENTRATOR, TEKMAR DOHRMANN 3100	$12,681
552872	SAP FLOW SYSTEM, DYNAMAX FLOW 32 (7)	$5,697
548669	SAW, BUEHLER ISOMET LOW SPEED	$4,043
467627	SAW, ELLIS 2000 MITRE BAND	$3,752
491064	SCAN CONVERTER, FERAL SC500 AUTOSYNC	$17,009
543077	SCANNER, AZTEK DIGITAL PHOTOLAB 1250 WIDE FORMAT	$22,895
537849	SCANNER, EPSON EXPRESSION 1640XL	$2,587
543042	SCANNER, EPSON EXPRESSION 1640XL	$3,575
520691	SCANNER, MICROTEK SCANMAKER 5	$2,200
550852	SCANNER, POLAROID SPRINTSCAN 4000 PLUS SLIDE	$1,131
520925	SCANNER, UMAX MIRAGE II (NOT TAGGED)	$1,901
547016	SCANNER, VIDEX LLP-256 LASERLITE PRO ASSET TRACKING	$2,407
543582	SCANSERVER, AZTEK CPU/DPL-SS-XP PROFESSIONAL IMAGING	$8,995
548359	SERVER, ORTEC ORSIM-III MCB	$1,330
554775	SERVICE UNIT, TECATOR SOXTEC 1046	$3,500
553719	SERVICE UNIT, TECATOR SOXTEC 1046	$4,111
553749	SERVICE UNIT, TECATOR SOXTEC 1046	$5,540
483032	SHAKER BATH, NEW BRUNSWICK G76	$3,388
484747	SHAKER TABLE, NEW BRUNSWICK INNOVA 2300	$4,387
515827	SHAKER, LAB-LINE ORBIT ENVIRON	$4,024
1642	SHOTGUN, BROWNING AUTO 12 GA	$725
1643	SHOTGUN, BROWNING AUTO 12 GA	$725
1641	SHOTGUN, BROWNING BPS 12 GA (# ENGRAVED ON)	$500
1652	SHOTGUN, HARRINGTON & RICHARDSON 410	$150
1646	SHOTGUN, REMINGTON 1100 12 GA	$625
448731	SHOW MANAGER, AVL	$1,308
SRO5100	SKID STEER LOADER, JOHN DEERE 675B	$17,295
513625	SLIDE MAKER, GCC COLORFAST II DIGITAL	$4,569
464906	SLIDE MAKER, GCC COLORFAST II DIGITAL	$5,354
501087	SLIDE PROJECTOR, ELMO TRV-35H	$4,444

491053	SLIDE PROJECTOR, ELMO TRV-35H	$4,472
477157	SOIL MIXER, BOULDIN & LAWSON 12201	$7,323
492177	SOLVENT WORKSTATION, ZYMARK TURBO VAP II	$5,634
458385	SONIC DISRUPTOR, TEKMAR TM600-2	$4,644
457566	SONIC SIFTER, ATM L3	$4,390
482591	SPECTROMETER, ARC SPECTRAPRO-150	$8,907
466868	SPECTROMETER, CANBERRA 7404 QUAD ALPHA	$4,500
546825	SPECTROMETER, NICOLET 960 RAMAN	$112,916
496923	SPECTROMETER, NICOLET MAGNA-IR 860	$78,687
455127	SPECTROMETER, ORDELA PERALS 8100AB	$9,161
536886	SPECTROMETER, PERKIN ELMER 4300 ICP-OES	$77,000
507544	SPECTROMETER, SPECTRA PHYSICS MOPO-730 (2)	$44,945
483569	SPECTROMETER, WALLAC 1220 QUANTULUS LS	$59,296
464184	SPECTROPHOTOMETER, BROOKS RAND AF-02 COLD VAPOR (2)	$8,131
499379	SPECTROPHOTOMETER, BROOKS RAND ATOMIC FLUORESCENCE	$10,045
509503	SPECTROPHOTOMETER, MOLECULAR DEVICES SPECTRAMAX	$22,605
438087	SPECTROPHOTOMETER, PERKIN-ELMER 5100 AA (4)	$68,891
520101	SPECTROPHOTOMETER, VARIAN CARY 500 SCAN UV-VIS-NIR (2)	$62,213
438024	SPECTRORADIOMETER, LI-COR LI-1800UW/22 (3)	$16,442
564041	SPRINT TRACK, COLUMBUS INSTRUMENTS (5)	$12,677
425429	STEREOMICROSCOPE, BAUSCH & LOMB ZOOM 95	$4,624
458189	STEREOMICROSCOPE, WILD M5	$4,317
425212	STEREOMICROSCOPE, WILD M5A	$3,666
425052	STEREOMICROSCOPE, WILD M5A	$4,132
513629	STEREOMICROSCOPE, WILD M5A	$4,319
414431	STEREOMICROSCOPE, WILD M5A	$5,082
425428	STEREOMICROSCOPE, WILD M5A	$5,366
425214	STEREOMICROSCOPE, WILD M5A	$5,574
447349	STEREOMICROSCOPE, WILD M5A	$7,980
425215	STEREOMICROSCOPE, WILD M5A (2)	$6,486
424090	STERILIZER, STERILMATIC STME-L	$3,345
441702	STORAGE VESSEL, BERGHOF/AMERICA 45L	$4,457
456526	SURFACE AREA ANALYZER, MICROMERITICS ASAP 2000	$23,750
529784	SWITCH, 3COM SUPERSTACK 12 PORT 10/100	$1,880
503248	SWITCH, 3COM SUPERSTACK 12 PORT 10/100	$2,167
574913	SWITCH, 3COM SUPERSTACK 12-PORT	$1,020
576330	SWITCH, 3COM SUPERSTACK 12-PORT	$1,020
556730	SWITCH, 3COM SUPERSTACK 3 4924	$6,294
560507	SWITCH, 3COM SUPERSTACK 3 4924	$6,400
556729	SWITCH, 3COM SUPERSTACK 3 4924 (2)	$8,219
545685	SWITCH, 3COM SUPERSTACK II 24-PORT DUAL SPEED HUB 500	$1,498
545686	SWITCH, 3COM SUPERSTACK II 24-PORT DUAL SPEED HUB 500	$1,498
547602	SWITCH, 3COM SUPERSTACK II 24-PORT DUAL SPEED HUB 500	$1,490
547603	SWITCH, 3COM SUPERSTACK II 24-PORT DUAL SPEED HUB 500	$1,490

	(2)	
501090	SWITCHER, EXTRON MATRIX 50 SERIES (5)	$7,480
491056	SWITCHER, EXTRON SW 6AR MX (3)	$3,463
539756	SYSTEM, COMET ASSAY ANALYSIS (3)	$17,500
545528	TAPE DRIVE, DRIVEWORKS 8MM	$2,560
542718	TAPE DRIVE, SUN 20GB STORAGE MODULE	$2,478
545568	TAPE DRIVE, SUN 5GB	$1,000
532581	TAPE DRIVE, SUN 5GB STORAGE PACK	$1,120
545801	TAPE LIBRARY, COMPAQ SSL2020	$11,499
542231	TAPE LIBRARY, QUALSTAR 6210	$16,810
566716	TC/EA INTERFACE, THERMOQUEST ELEMENTAL ANALYZER	$169,657
501091	TELECONFERENCER, GENTNER GT724 GROUP	$2,824
475972	TELESCOPE, STAR-TRON MK 428 NIGHT VISION	$7,604
481968	TELESCOPE, STAR-TRON MK 428 NIGHT VISION	$7,604
553743	TELESCOPE/MICROSCOPE RECEPTOR, LI-COR 1800-06 (2)	$3,782
460276	TELEVISION, MAGNAVOX 41" PN3041A102	$1,499
460277	TELEVISION, TOSHIBA 32" CG3272B	$1,099
542356	THERMALCYCLER, BIO-RAD ICYCLER (2)	$55,331
569887	THERMOCYCLER, APPLIED BIOSYSTEMS GENEAMP PCR 9700	$7,241
	THERMOCYCLER, APPLIED BIOSYSTEMS GENEAMP PCR 9700 (2?)	$8,996
514176	THERMOCYCLER, EPPENDORF MASTERCYCLER GRADIENT	$5,921
514177	THERMOCYCLER, EPPENDORF MASTERCYCLER GRADIENT	$5,921
514178	THERMOCYCLER, EPPENDORF MASTERCYCLER GRADIENT	$5,921
514179	THERMOCYCLER, EPPENDORF MASTERCYCLER GRADIENT	$5,921
452165	THERMOGRAVIMETRIC ANALYZER, TA TGA 2950	$26,037
491050	TILTSCREEN, AMX AXP-T/S 0696	$3,833
501085	TILTSCREEN, AMX AXP-T/S 0696	$6,261
492532	TIME BASE CORRECTOR, PRIME IMAGE TBC/FREEZE II	$3,521
493695	TITRATION SYSTEM, RADIOMETER (3) (ERDA)	$7,765
562268	TITRATOR, APOLLO SCITECH AS-ALK1	$8,900
461202	TLD READER, HARSHAW QS 3500	$11,295
561175	TRACE GAS CHROMATOGRAPH, THERMO FINNIGAN (2)	$98,563
SRO5157	TRACTOR, FORD 3600	$9,637
SRO5170	TRACTOR, NEW HOLLAND 16LA	$17,000
SRO2661	TRAILER, AMERATRAIL AIRBOAT	$2,490
SRO2664	TRAILER, CAROLINA TRAIL UTILITY	$1,000
SRO2822	TRAILER, CUSTOM TRAILER WORKS 8X24 FLATBED	$3,650
SRO2821	TRAILER, E-Z DUMPER EZ610DX DUMP	$4,148
SRO4054	TRAILER, E-Z LOADER 15-18 ELECTROFISHING	$2,176
SRO3126	TRAILER, E-Z-LOAD	$1,000
SRO3125	TRAILER, E-Z-LOAD	$1,000
SRO2826	TRAILER, MAGIC TILT CV1768	$1,148
SRO2909	TRAILER, MCCLAIN 18-13GD	$1,475
SRO3144	TRAILER, MICHI-CRAFT CANOE	$1,269
SRO3016	TRAILER, STARNES STARLINE PONTOON	$1,397

SRO4057	TRAILER, SUPREME UT-7000 FLATBED	$1,969
SRO2663	TRAILER, TIMBER WOLF H612T UTILITY (RECYCLING)	$6,278
555087	TREADMILL, COLUMBUS INSTRUMENTS (2)	$12,677
SRO5458	TRENCHER, DITCH WITCH 4010DD	$33,199
564438	TYPEWRITER, IBM WHEELWRITER 5000	$1,217
499673	TYPEWRITER, IBM WHEELWRITER 5000	$1,491
451416	ULTRA CENTRIFUGE, BECKMAN OPTIMA L-80 W/2 ROTORS	$53,123
525829	ULTRAPURE WATER SYSTEM, MILLIPORE MILLI-Q ELEMENT	$8,326
516453	ULTRASOUND SYSTEM, ALOKA SSD-500V PORTABLE (4)	$15,545
437375	ULTRASOUND SYSTEM, TOSHIBA SONOLAYER-L SAL-32B (6)	$15,225
559185	UV DETECTOR, ALLTECH 460	$3,026
447126	UV/VIS DETECTOR, DIONEX	$7,550
449929	VACUUM OVEN, FISHER 282A ISOTEMP	$3,638
446742	VIBROCORER, ROSSFELDER HUMMINGCOR W-1	$8,100
451283	VIDEO CAMERA SYSTEM, FUHRMAN DIVERSIFIED (2)	$13,664
501105	VIDEO CAMERA, SONY DXC-970MD 3CCD (3)	$12,272
545563	VIDEO CASSETTE RECORDER, JVC	$1,000
425441	VIDEO CASSETTE RECORDER, PANASONIC AG6300	$1,800
491051	VIDEO CASSETTE RECORDER, PANASONIC AG-7350	$5,093
520748	VIDEO COPY PROCESSOR, MITSUBISHI P68U	$3,609
501706	VIDEO COPY PROCESSOR, MITSUBISHI P78U	$3,180
491052	VIDEO IMAGER, PANASONIC WE-160 (2)	$5,674
492537	VIDEO SYSTEM, SIERRA 16 BY 16 (2)	$14,323
501086	VIDEO VISUALIZER, CANON RE-350	$3,570
489022	WATER BATH, LINDBERG/BLUE RSWB3222A (2)	$3,118
469953	WATER QUALITY LOGGER, GRANT/YSI 3800 (2)	$6,386
475193	WATER QUALITY LOGGER, YSI 6000 UPG (2)	$8,204
475191	WATER QUALITY LOGGER, YSI 6000 UPG (2)	$8,677
510876	WATER QUALITY MULTIPROBE, HYDROLAB H20 (2)	$4,375
505271	WATER QUALITY PROBE, YSI 6000 UPG3	$6,633
516230	WAVELENGTH ANALYZER, BURLEIGH RFP-3600 RESOLVER	$21,534
SRO6977	WELDER, MILLER BLUE STAR II W/TRAILER	$1,443
555983	X-RAY ARRAY DETECTOR, CANBERRA GUI01102 (3) (NOT TAGGED)	$65,907
531611	X-RAY DETECTOR, CANBERRA SL30165 (UNTAGGED)	$8,500
573740	X-RAY DIFFRACTOMETER, SCINTAG X2 XGEN-4000 (2)	$121,679
468627	X-RAY INSPECTION SYSTEM, TORREX 150D	$13,800
450398	X-RAY MACHINE, MINXRAY 903 B-85 PORTABLE	$5,000
451633	X-RAY MACHINE, MINXRAY X300G PORTABLE	$5,300
584963	XRF ANALYZER, INNOV-X SYSTEMS ALPHA-4000 SL ENVIRONMENTAL METALS	$34,095

APPENDIX E

DOE-Owned Buildings Assigned to SREL

NUMBER	DESCRIPTION	AREA
056-00A	Picnic Shelter	A
662-5G	Par Pond Boat Dock	G
662-8G	Pond B Boat Dock	G
662-9G	Pond C Boat Dock	G
737-11A	Greenhouses 6, 7, & 8	A
737-12A	Greenhouse 9	A
737-13A	Rhizotron	A
737-14A	Flight Cage #3	A
737-15A	Flight Cage #4	A
737-17A	Cold Room	A
737-18A	Growth Chambers/Storage Building	A
737-19A	Outdoor Equipment Storage Area	A
737-1A	Aquatic Animal Facility	A
737-20A	Grounds Maintenance	A
737-21A	Disinfection Facility	A
737-22A	Business Annex	A
737-24A	Animal Care Facility	A
737-25A	Technician Office Building	A
737-26A	Receiving Building	A
737-27A	Distance Learning Center	A
737-28A	RFTS Heavy Equipment Shed	A
737-2A	Headhouse	A
737-3A	Greenhouses 1 & 3	A
737-4A	Greenhouses 4 & 5	A
737-5A	Maintenance Shop	A
737-6A	Brooder House	A
737-7A	Flight Cage #1	A
737-8A	Flight Cage #2	A
737-9A	Experimental Ponds (6 each)	A
737-A	Main Laboratory	A
737-G	Par Pond Laboratory	G
739-4G	Aquatic Ecology Laboratory	AEL
739-G	Aquatic Ecology Laboratory Greenhouse	AEL
745-4A	Storage Building **(not yet transferred to SREL)**	A
754-03	Diesel Generator	A
772-4G	Wild Animal Holding Facility	Forestry
772-12B	Artificial Streams	B
772-25B	HWCTR Laboratory	B

772-26B	HWCTR Office Building	B
772-27B	HWCTR Office/Laboratory	B

SREL SAFETY MANUAL

Approved by:
Paul M. Bertsch
Director, Savannah River Ecology Laboratory

EHS-04-0001
8/10/04, drm
Revision 3

SREL SAFETY MANUAL

Savannah River Ecology Laboratory
Revision Date: August 10, 2004

CHAPTER 1. PROGRAM DESCRIPTION **4**

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Note: *denotes portions of the Safety Manual that are included in the DOE accepted standards set resulting from the Necessary and Sufficient Process (1997).

CHAPTER 1. PROGRAM DESCRIPTION

1.1 POLICY

All employees of the University of Georgia and all persons at the Savannah River Site (SRS) who work under the auspices of the University of Georgia (previously referred to as "personnel") are responsible for the safety of personnel and safe operation of equipment with which they are involved. The Director of the Savannah River Ecology Laboratory (SREL) is ultimately responsible for the safety of all SREL personnel and subcontractors. Faculty and other SREL supervisors are directly responsible for supervising the safety of their personnel and subcontractors. SREL personnel are personally responsible for ensuring that they do not contribute to injuries of fellow workers or themselves, and they have the right to cease any work activities that they consider to be unsafe. Each classified position must be reviewed as to the safety requirements of the job and how safety performance will be assessed.

1.2 SCOPE

This SREL Safety Manual is a ready reference document for general policy and information for all SREL personnel. This manual is not an all-inclusive compilation of regulations and procedures; rather, it is a broad guide to safety requirements. Additional information can be obtained from the new personnel training program, job-specific training, project safety appraisal forms, chemical hygiene plans, and by contacting supervisors and the SREL Safety Services.

When necessary, changes to the SREL Safety Manual will be reviewed by the Safety Committee, approved by the SREL Director, and reissued to employees with a notification of the changes.

1.3 REGULATORY BASIS

The SREL Safety Manual establishes guidelines that comply with requirements set by the University of Georgia, and by the standards set adopted in conjunction with the U.S. Department of Energy (DOE) (see Appendix A: Attachment 2).

1.3.1 Complaints

SREL encourages any employee who has a complaint about job safety to refer to their immediate supervisor or the SREL Environmental Health and Safety Manager for appropriate resolution.

1.3.2 Internal Appraisals

Internal appraisals of the EH&S Program will be conducted annually by SREL management.

1.4 SAFETY PROGRAM ORGANIZATION AND RESPONSIBILITIES

1.4.1. SREL Director

The SREL Director will be the final authority in safety matters. The Director can delegate this responsibility to the Environmental Health and Safety Manager or other technically qualified individuals.

1.4.2. SREL Environmental Health and Safety Manager

The SREL Environmental Health and Safety Manager (EH&S Manager) is that SREL staff member, appointed by the Director, who is qualified by education, training, and experience to direct both the laboratory and radiation safety programs at SREL. The SREL Environmental

Health and Safety Manager is responsible for all industrial safety, industrial hygiene, fire protection, firearms safety, radiation safety and vehicle safety programs. Other responsibilities include the management of safety training and safety awareness programs. SREL Safety Services is comprised of the SREL EH&S Manager and SREL's Laboratory Safety Officer.

1.4.3. SREL Health and Safety Committee

The SREL Health and Safety Committee addresses the health and safety concerns associated with the operation of SREL and reports to the SREL Director. The responsibilities of this committee are outlined in its committee charter (S-94-0001).

1.4.4. SREL Supervisors

Each supervisor will approve all projects under his/her supervision and coordinate necessary safety activities with other staff members. To carry out these responsibilities, each supervisor will:

a) Become familiar with the work being performed under his/her supervision and address safety considerations.
b) Provide personnel with training that enables them to safely perform their assigned duties.
c) Provide personnel with equipment and supplies to enable them to perform their assigned duties safely.
d) *Assign personnel job duties that take into account the individual's physical limitations and abilities.
e) *Develop procedures and controls that will provide for the safe performance of assigned duties.
f) Monitor personnel safety performance and adherence to approved and established safety procedures.
g) Inform personnel of safety policies and any changes to these policies.
h) Initiate corrective actions for identified safety deficiencies.
i) Report accidents and injuries to the Environmental Health and Safety Manager.
j) Review all job descriptions and ensure that safety is included as a measure of job performance.

Note: *denotes portions of the Safety Manual that are included in the DOE accepted standards set resulting from the Necessary and Sufficient Process (1997).

1.4.5. SREL Personnel

SREL personnel will perform all assigned work in a manner that minimizes risk and in accordance with applicable procedures and training. SREL personnel have the responsibility and authority to cease work activities when they consider such activities to be unsafe. SREL personnel must report the following information immediately to their supervisor:

a) All job-related injuries and illnesses
b) Accidents causing injury
c) Incidents with a potential for injury
d) Violations of safety procedures, intentional or not
e) Defective equipment which may lead to worker injury or illness
f) Unusual or unanticipated hazards
g) Any condition which may adversely affect an individual's ability to perform their assigned duties safely.

1.5 SAFETY TRAINING PROGRAM

The objective of the SREL Safety Training Program is to provide personnel with the information necessary to enable them to work safely by minimizing risk. Records of all documented SREL safety training will be maintained in the appropriate personnel files. If an individual works on SREL projects and is required to have a permanent site badge, the individual must attend SREL Safety Orientation for New Personnel (SO100). For other individuals who work on SREL projects, the individual's supervisor must either utilize the Safety Briefing for Visitors to the SREL form or send the individual to the Safety Orientation for New Personnel. All vendors or subcontractors working at SREL facilities will sign a Safety Briefing for Vendors Form.

1.5.1 Safety Orientation for New Personnel

All new, badged SREL personnel will receive general safety training provided by SREL Safety Services. They will be required to read the applicable sections of the SREL Safety Manual and discuss any questions with their supervisor.

1.5.2 Job-Specific Training

Faculty members or technically qualified line supervisors will provide job-specific training required by a particular lab/field (SREL Safety Course: JS101), maintenance/electrical (SREL Safety Course: JS102), or administrative (SREL Safety Course: JS103) job assignment. If any SREL personnel receive an assignment to a job or work area that has special hazards or requires precautions that are not outlined in this safety manual, the responsible Faculty member or line supervisor shall provide and document specific safety instruction. Additional training will be provided as required by new assignments or changes in procedure. The supervisor shall ensure that personnel do not begin work without adequate safety equipment or the knowledge of safety practices necessary to perform that job.

1.5.3 Task Specific Training

All personnel whose job duties require them to perform tasks with the following will be required to take task specific safety training: maintenance equipment, chain saws, motorized boats, forklifts, all-terrain vehicles, radioactive materials, lasers, and X-ray producing devices.

1.5.4 Vehicle Safety

Only UGA employees or students paid from UGA stipends and who possess a valid driver's license are permitted to drive or operate SREL motor vehicles (UGA or GSA leased vehicles).All vehicle accidents on the Savannah River Site shall be reported to the Savannah River Site Operations Center (SRSOC) at 5-1911. For offsite government vehicle accidents, notify the local police authority and obtain a police report. All government vehicle accidents shall be reported to the vehicle custodian, the appropriate SREL supervisor, and the SREL EH&S Manager.

1.5.6 Additional Voluntary Safety Related Training

Voluntary safety related training programs may be made available periodically to SREL personnel by SREL Safety Services in areas such as: Fire Prevention, Radiation Safety, Personal Safety and Security, Laboratory Safety, Ergonomics and similar topics.

CHAPTER 2. MEDICAL AND EMERGENCY PROCEDURES

This chapter outlines for SREL personnel the minimum requirements for reporting injuries, obtaining medical treatment for job-related injuries, and responding to emergency situations.

2.1 PREVENTIVE MEASURES

SREL personnel will take appropriate measures to protect themselves from health and safety hazards. SREL Safety Services will supply barrier creams for protection from skin contact hazards and sunscreen lotions for protection from UV light hazards.

2.2 REPORTING INJURIES

SREL personnel will report all work related injuries and illnesses to their supervisors and abide by any work restrictions specified by medical personnel. SREL personnel will follow these procedures when reporting work related injuries and illnesses:

1. SREL personnel will promptly report all work related injuries and illnesses to their supervisor.

2. The injured/ill person's supervisor will determine the need for medical attention. However, personnel may seek medical attention at any time they deem necessary. Completed UGA and DOE Incident/Accident forms are required for any injuries that require medical attention beyond first aid treatment. UGA employees are encouraged to fill out a Worker's Compensation Form within 5 working days if they have suffered an injury on the job.

3. For on-site injuries requiring emergency medical attention,the SRSOC should be contacted at phone number, 3-3911(from an SRS phone) or (803)-725-1911 from a cell phone.

4. The injured/ill person will submit copies of the medical evaluation form to his/her supervisor and the SREL Safety Services.

5. The supervisor will assign or modify job duties of the injured/ill person consistent with any work restrictions advised by qualified physician.

2.3 SAFETY SHOWERS AND EYE WASH STATIONS

SREL Research and Facilities Technical Services (RFTS) conducts annual inspections and tests of safety showers and eye wash stations.
The route to each shower and eye wash station will remain unobstructed.
The following steps describe the use of safety showers and eye wash stations.

a) Shower. Turn the shower on full and stay under until all injurious material has been washed away. Remove clothing if it is saturated with injurious materials. Do not remove chemical splash goggles until the individual's head is thoroughly rinsed and flushed of chemicals. After showering, warm the body by wrapping immediately in a blanket to avoid shock from the cold water. Do not be shy about removing clothing; it could cost you your flesh!

b) Eye Wash. Do not remove chemical splash goggles until the individual's face and eyes are thoroughly rinsed or flushed of chemicals, because residual injurious material may drain into the eyes. Wash material from around the chemical splash goggles, remove them and, while holding the affected eye open with one hand, wash irritants from the eye. Wash eye thoroughly for 15 minutes.

2.4 MEDICAL EMERGENCIES

In the event of a medical emergency at SRS, immediately call 3-3911.

2.4.1 *Snakebites

Bites by venomous snakes or by snakes that cannot be identified should receive medical attention. A victim should receive medical attention as quickly as possible, even in cases when snakebite is only suspected. The following general first aid steps should be used for snakebite on the SRS:

1. Seek medical attention immediately. Call 3-3911 or notify the SRSOC by two-way radio. The SRSOC will dispatch an ambulance to treat and transport the bitten individual to University Hospital in Augusta, Georgia.
2. Contact the University Hospital Emergency Room by telephone at (706)-774-5060 and let them know that a snakebite victim is on the way. Request that they contact an attending physician who is experienced in treating snakebite victims.
3. Keep the victim as calm as possible, preferably lying down.
4. If bitten on an extremity, immobilize the extremity and keep it at or below heart level.
5. DO NOT: incise the affected area, apply constricting bands or tourniquets, cool the bite site, or compress extremities by wrapping.

*2.5 *FIRE SAFETY AND EMERGENCIES*

All SREL personnel are responsible for complying with the fire safety requirements that are applicable to their job tasks as set forth in the following:

University of Georgia Fire Safety Manual
NFPA 101 - Life Safety Code
NFPA 45 - Fire Protection for Laboratories Using Chemicals
NFPA 30 - Flammable and Combustible Liquids Code
NFPA 59 - Storage and Handling of Liquefied Petroleum Gases

SREL management, supervisors, and area custodians are responsible for assuring that facilities and operations under their control meet the preceding fire safety requirements.

SREL Safety Services is responsible for evaluating SREL programs and facilities for compliance with respect to fire safety requirements.

The SREL RFTS is responsible for placement, maintenance, and inspection of facility fire extinguishers in compliance with NFPA 10 - Standard for Portable Fire Extinguishers.

In the event of a fire alarm, personnel will exit the facility using the shortest, safe route and proceed to the designated primary fire rally point. Personnel will remain at the fire rally point until given further direction by SRS fire department personnel.

*2.6 *HAZARDOUS CHEMICAL SPILLS OR RELEASES*

In the event of a hazardous chemical spill or uncontrolled release of hazardous materials, SREL personnel will notify their immediate supervisor. SREL personnel will take appropriate measures to contain the spilled material, notify other affected personnel, and evacuate the area if necessary. The supervisor will determine the necessity of contacting the SRSOC (3-3911) for emergency response and cleanup. The supervisor will notify SREL Safety Services in the event that the SRSOC is contacted. SREL Safety Services is available for consultation with regard to spill response and cleanup.

2.7 SITEWIDE EMERGENCIES

2.7.1 Responsibilities

Director

Responsible for providing public information coordination with DOE-SR public information personnel (Office of External Affairs).

Emergency Coordinator (Assistant Director)

- Responsible for developing and implementing emergency response procedures.
- Ensures that all SREL personnel are trained in the SREL Emergency Response Procedures.
- Directs emergency responses and protective actions, when required.

Assistant Emergency Coordinator (EH&S Manager)

Assumes the responsibilities of the Emergency Coordinator when the Emergency Coordinator is not present.

Laboratory and Office Supervisors

Responsible for establishing emergency shutdown procedures when appropriate for laboratory operations, and for ensuring that these procedures are posted and current.

Receptionist

- Receives notifications of emergencies that have occurred elsewhere on the SRS (from the SRSOC) and from SREL personnel for any emergency conditions at SREL.
- Notifies the SREL Emergency Coordinator of emergency conditions.
- Announces protective actions over the intercom system, as directed by the Emergency Coordinator.
- Notifies the SRSOC or other emergency organizations such as fire, medical, or security in case of emergency conditions at the SREL, as directed by the Emergency Coordinator, or other appropriate authority.

SREL Personnel

- Responsible for appropriately responding to all sitewide emergency notifications.
- Responsible for the safe evacuation of visitors.
- Follow shutdown procedures for laboratory equipment, if safety permits.
- Personnel with physical impairments are responsible for meeting with the SREL Emergency Coordinator to plan in advance a safe exit route.
- Responsible for signing out a fully charged and functioning, portable two-way radio when working in areas where site emergency announcements cannot be heard. Personnel will keep these radios on while in the field.

2.7.2 *Field Operations Procedures

In the event of an emergency situation occurring elsewhere on the Savannah River Site that affects SREL personnel, the following will occur:

1. The SRSOC will notify the SREL Receptionist and SREL field personnel via radio that an emergency has occurred and/or is in progress, give information on the type and status of the emergency, affected SRS areas, and recommended protective actions.

2. The Receptionist will then notify the Emergency Coordinator (the Assistant Coordinator if the Emergency Coordinator is not available) and give him the information from the SRSOC. The actions of the Emergency Coordinator will depend on the recommendations of the SRSOC and the emergency situation.

3. The Emergency Coordinator will check with the Vehicle custodians (or designees) to determine which personnel are signed out on the vehicle and/or two-way radio lists.

4. Supervisors will notify SREL personnel within the SRS environs (via radio) of the required or recommended protective actions.

5. Personnel within the SRS environs shall perform these protective actions and shall notify the SREL receptionist when these actions have been successfully completed.

6. The receptionist shall notify the Emergency Coordinator of the status of protective actions by their program personnel. The Emergency Coordinator is responsible for ensuring that the SRSOC has been notified that SREL personnel have safely and successfully completed the protective actions.

7. If attempts to notify SREL personnel are not successful, the Emergency Coordinator shall be notified immediately. It is the Emergency Coordinator's responsibility to notify the SRSOC that protective actions by SREL personnel cannot be verified and that personnel may still be in the affected area. At this time, the SRSOC may dispatch security or other personnel to the affected area to locate and evacuate the SREL personnel.

2.7.3 *SRS Threat, Bomb Threat and Intruder Alert Procedures

Bomb Threat or other SRS Threat

If a bomb threat or other threat to SRS is received by telephone, remain as calm as possible and record as much information as possible using the SRS Threat Checklist (see Appendix A, Attachment 4 of this manual. As soon as the threat call has ended contact the SRSOC by phone at 3-3911

Intruder Alert

When SREL Supervision is notified of a possible intruder incident, or when such an incident occurs, SREL personnel will:

1. Close and lock outside doors.
2. Assist Security in checking the building for unauthorized personnel.
3. Report suspicious activity to Security.
4. If dismissed by the Director of SREL or other responsible authority, leave the SRS by the prescribed route, away from the incident area.

2.7.4 *Natural Disaster Procedures

1. Advance warning, if any, will be received from the SRSOC and disseminated over the intercom.
2. The Emergency Coordinator is responsible for directing protective actions, if any.
3. Personnel should remain indoors.In the event of a tornado or other extremely high wind situations, personnel should stay away from windows and glass doors as much as possible.
4. *Those personnel out-of-doors during passage of possible tornadoes should keep low to the ground and avoid being caught in open fields. Tornadoes often accompany thunderstorms. Therefore, personnel must avoid both lightning and possible flash floods. If using a boat, return to shore and seek higher ground. Avoid ravines and shallow creek beds that may channel sudden surges of water.
5. The Emergency Coordinator will request assistance from Medical, Security, or Fire, as needed. He will either telephone direct or request assistance through the SRSOC. Personnel may request emergency assistance without first notifying the Emergency Coordinator; however, he should be notified as soon as possible.
6. All personnel should immediately report any facility or equipment damage resulting from a natural disaster to their supervisor and the SREL Emergency Coordinator. If necessary, the Emergency Coordinator will report any damage to the SRSOC.
7. Damage assessment activities will be directed by the Emergency Coordinator with the assistance of SREL RFTS Personnel and the SREL EH&S Manager.

2.7.5 *Emergencies During Non-duty Hours

Emergencies at SREL

Personnel aware of emergency situations at SREL during non-duty hours shall be responsible for protective actions at SREL. These personnel shall report the situation to the SRSOC (3-3911) as soon as possible, consistent with safety. Requests for medical, fire, and security support can be made directly by calling the SRSOC at 3-3911.

Personnel discovering and reporting the emergency incident are responsible for ensuring that a protective response evacuation has taken place, if required, by physically checking the building, if time and circumstances permit this action without sacrificing safety. Assistance shall be sought from any other personnel in the building.

Emergencies Not at SREL

If the SRSOC informs any SREL personnel, during non-duty hours, that an actual (or impending) emergency requiring protective actions of personnel at the SREL has occurred, it is the responsibility of this person (or the most senior faculty member present) to fulfill the required protective actions, including notifying other personnel in the building and implementing any required shutdown procedures. Non-duty hours are defined as times when the SREL Receptionist station is not staffed, weekends, or during SREL holidays. Requests for Security assistance should be made through the SRSOC at phone number: 5-1911.
Physically check all rooms in the building (if appropriate and if there is sufficient time) before evacuating the building. Obtain assistance from other personnel in the building, if available.

CHAPTER 3. GENERAL SAFETY

This chapter provides SREL employees with minimum safety requirements for general work.

3.1 GENERAL SAFETY POLICIES

The following general safety policies apply to all SREL personnel:

1. Perform any work assignment only if convinced that it can be done safely. The following items should be considered:
    a) The individual is properly trained.
    b) The right tools are selected.
    c) The proper protective clothing and devices are readily available.
2. Report all work related injuries and illnesses to immediate supervisor and abide by any work restrictions specified by medical personnel.
3. Report all area emergencies (i.e., fires, large chemical spills, life-threatening injuries) to the SRSOC by telephoning 3-3911 on site.
4. Adhere to all posted safety warnings and written procedures.
5. Report all observed unsafe practices or conditions to immediate supervisor.
6. Maintain good housekeeping practices in each work location.
7. *Do not place material and equipment with the potential for emitting hazardous gases or fumes near building air intakes.
8. *Do not operate electrically powered tools that have not been inspected by maintenance personnel. SREL does not allow personally owned power tools in the laboratory or the field.
9. Maintain work related equipment and supplies in a safe operating condition.
10. Maintain clear access to fire extinguishers, fire alarm pull stations, electrical service panels, standpipes, and safety equipment (e.g. safety showers, eye wash stations).
11. Maintain and house all venomous snakes or dangerous animals in locked, clearly marked containers or containment areas.
12. *Do not wear shorts or sandals where hazardous chemicals are used or stored.
13. *Do not wear contact lenses when working with hazardous chemicals.
14. When working outdoors, wear clothing that provides adequate protection from the elements and the environment, such as extreme cold or hot weather, or thick vegetation or cold water.
15. Wear adequate personal protective equipment when working with sharp objects or tools, such as knives, scalpels, glass, equipment blades, and aluminum flashing.
16. Wear adequate personal protective equipment when working with equipment or processes that produce extremes of heat or cold, such as motors, engines, hot plates, gas burners, soldering, welding, and cryogenic material or equipment.
17. Keep walkways clear and working surfaces in good repair.

3.2 *VEHICLE SAFETY

SREL personnel will follow these rules of vehicle safety:

1. Report any maintenance problems with government vehicles (broken windshields, lights, mirrors, stuck windows, faulty brakes, etc.) immediately to the custodian to whom the vehicle is assigned.
2. Wear seat belts at all times while riding in government vehicles.
3. Secure all material carried in open trucks against shifting, sliding, or blowing out.
4. Report any vehicle accidents that occur on the SRS immediately to the SRSOC (5-1911). A written report will be made by WSI at that time.
5. For offsite government vehicle accidents, notify the local police authority and obtain a police report.
6. All government vehicle accidents shall be reported to the vehicle custodian, the appropriate SREL supervisor, and the SREL EH&S Manager (5-0063). Completion of an accident report will be required at this time and a review of the accident will take place.
7. In addition to these basic vehicle safety rules, SREL vehicle operators will operate government vehicles in accordance with current South Carolina Motor Vehicle regulations.

3.3 *GENERAL ELECTRICAL SAFETY RULES

Only SREL electricians or computer maintenance personnel are permitted to repair or modify electrically powered equipment.

SREL personnel are responsible for adhering to the following procedures:

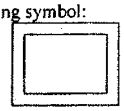
1. Visually inspect electrical equipment before use.
2. Never use equipment that has a damaged power cord, socket or insulating case.
3. Never use an extension cord that is damaged.
4. Never use an extension cord or multiple-outlet adapter plugs as substitutes for permanent wiring.
5. Never place an extension cord in an area where it might become damaged or where it presents a tripping hazard.
6. Avoid kinking or excessive bending of extension and power cords. This may damage the wire inside, which could create a shock hazard.
7. Never perform maintenance on an energized piece of equipment.
8. When using electrical equipment in a wet or damp location, contact the SREL electrician to ensure that the equipment is approved for that type of work.
9. Never use electrical equipment in a potentially explosive atmosphere.

3.4 *PORTABLE POWER HAND TOOLS

In addition to the risks of handling, a portable power tool presents hazards similar to those of a stationary machine of the same kind. Selection of the proper tool for a particular task is extremely important. This selection is the responsibility of the supervisor.

SREL RFTS is responsible for inspecting each portable power hand tool before assigning it and after it is returned. If necessary, SREL RFTS will repair or replace a tool.

The use of a ground wire on every portable electric tool is required unless the tool is double insulated. Such tools will carry such permanent marking as "double insulation" or "double insulated" and/or the following symbol:



The supervisor is responsible for ensuring that power hand tool operators use the appropriate personal protective equipment for the task.

SREL personnel will use the following procedures for hand tools:

1. .Do not operate a power hand tool without receiving training in its proper use and limitations.

2. When working on or near electrical equipment where a shock hazard exists, ensure that the equipment is locked out according to the lockout procedure.

3. If necessary, erect barricades or curtains, or post signs near the work area.

4. Always test the tool's operating trigger before beginning the task. This test ensures that the operation ceases when you release the trigger.

5. When using pneumatic (air-powered) hand tools, ensure that the air hose and hose connections are designed for the air pressure to be used and that they have no weak spots or loose fittings. Although equipment inspection is primarily the responsibility of the SREL RFTS, every user should perform an operational check before using the tool.

6. Never leave a portable hand tool unattended without disconnecting the power source (i.e., electricity or air pressure).

7. Notify the SREL RFTS immediately if the assigned tool is malfunctioning.

*3.5 *EQUIPMENT AND MACHINE GUARDING*

Operation of some SREL equipment and machines may present the additional hazards such as the potential for cuts, punctures, abrasions, pinching, or crushing as a result of accidental contact with moving parts, power transmission components, or the point of operation. Equipment or machinery that presents these hazards shall be adequately guarded to protect personnel from injury. The following policies will be followed with respect to equipment guarding and safeguards.

1. SREL personnel will inspect equipment guarding for proper operation and integrity prior to each use of the equipment and will immediately remove from service, equipment with inadequate or damaged guarding.
2. SREL personnel will utilize all equipment guarding and safeguards as designed, and shall not attempt to circumvent or operate equipment or machinery without such guarding or safeguards in place.
3. SREL personnel will not modify or engineer changes to factory installed equipment guarding or safeguards without specific approval from their SREL supervisor.

3.6 PERSONAL PROTECTIVE EQUIPMENT

SREL supervisors will provide personal protective equipment for eyes, face, head, extremities, respiratory system, skin, or hearing to employees if physical, chemical, or radiological hazards could cause injury or impairment. Supervisors, with the assistance of the Environmental Health and Safety Manager when necessary, will determine protective clothing and equipment needs for specific work activities prior to beginning that activity. Supervisors will instruct personnel on the proper use and maintenance of personal protective equipment.

SREL personnel will:

1. Use personal protective equipment as instructed and in areas where it is required.
2. Use, maintain, and store personal protective equipment in a sanitary and reliable manner.
3. Never modify personal protective equipment.

3.7 GEORGIA RIGHT TO KNOW LAW

The Georgia Right To Know Law is invoked for all State of Georgia employees by the following law and rules:

The Public employee Hazardous Chemical Protections And Right To Know Act of 1988 Official Code Of Georgia Annotated, Title 45, Chapter 22
Georgia Department of Labor Safety Engineering Section Chapter 300-3-19 Public Employee Hazardous Chemical Protection And Right To Know Rules

The purpose of the Georgia Right To Know Law is to ensure that the hazards associated with chemicals are evaluated and that this hazard information is communicated to affected employers and employees. Copies of the Georgia Right To Know Law and the University of Georgia's policy and implementation plan may be obtained from the SREL Environmental Health and Safety Manager or by visiting The University of Georgia's Environmental Safety Division website at the following URL:

http://www.esd.uga.edu/rtk/

3.7.1 SREL Supervisors

SREL supervisors are responsible for the following with respect to the UGA HAZARDOUS CHEMICAL PROTECTION COMMUNICATION (RIGHT TO KNOW) PLAN :

1. Ensuring that any employee who will routinely be exposed to any hazardous chemical, receives additional CHEMICAL-SPECIFIC TRAINING before beginning work on the following:

    a) any such chemicals present in workplace operations
    b) physical and health effects of the chemicals
    c) methods and observation techniques used to determine the presence or release of the chemicals in the work area
    d) how to lessen or prevent exposure to these chemicals by proper work practices and use of personal protective equipment
    e) emergency procedures to be followed in the event of exposure
    f) procedures for safe disposal of waste chemicals.

2. Maintaining ready accessibility of MSDS's for employees in their work areas for review during each work shift.

3. Requesting assistance from SREL Safety Services concerning any non-routine occurrences involving hazardous chemicals.

4. Assuring that employees who work with hazardous chemicals complete annual Georgia Right-To-Know Chemical-Specific Refresher Training. This training is available on the University of Georgia's Environmental Safety Division website at the following URL:

   http://www.esd.uga.edu/rtkcs/

SREL supervisors are also responsible for ensuring that personnel under their supervision adhere to the policies specified in the UGA Policy and Procedure Manual, Environmental Safety Services Division: Environmental Safety Policies and Environmental Safety Procedures.

3.7.2 SREL Chemical Coordinators

SREL Chemical Coordinators are responsible for:

1. Ensuring that labels of all incoming containers of hazardous chemicals are legible and are not removed or defaced, display the appropriate hazard warnings, list the name and address of the manufacturer,
2. Affixing the date of arrival on all chemicals.
3. Informing SREL Safety Services if they are unable to obtain an MSDS for any hazardous chemical.
4. Ensuring that Material Safety Data Sheets (MSDSs) for each hazardous chemical are readily accessible within each work shift where these chemicals are used or stored.
5. Posting MSDS Location Signs and Laboratory Caution Signs in their respective chemical laboratory areas.
6. Maintaining an inventory of hazardous chemicals stored or used in their work areas.
7. Ensuring that legible labels are affixed to all containers to which hazardous chemicals are transferred. All secondary containers of hazardous chemicals will be labeled with the following:

   a) the chemical name (as it appears on the MSDS)
   b) the transfer date
   c) the custodian
   d) a completed National Fire Protection Association (NFPA) diamond label

8. Revising hazardous chemical container labeling in the event that they become aware of significant changes regarding the hazards of such chemicals.

3.7.3 SREL Safety Services

The SREL Safety Services is responsible for:

1. Providing for initial SREL personnel training on categories of chemical hazards, methods to prevent exposure to hazardous chemicals, and the details of The UGA Right To Know Plan

3.7.4 SREL Personnel

SREL personnel are responsible for:

1. Knowing the location of the Material Safety Data Sheets (MSDSs) for chemicals used or stored in their work areas.
2. Reading the labels and MSDSs for the hazardous chemicals they use.
3. Following established procedures for the handling and storage of hazardous chemicals.
4. Reporting all hazardous chemical spills to their immediate supervisor.

3.8 INDUSTRIAL HYGIENE PROGRAM

The SREL Industrial Hygiene Program in compliance with the American Conference of Governmental Industrial Hygienists Threshold Limit Values for chemical Substances and Physical Agents and Biological Exposure Indices is designed to identify and document existing and potential occupational health hazards which are the result of environmental factors and stresses including those of chemical, physical, and biological origin.

3.8.1 General

1. SREL Management will implement appropriate control measures to mitigate potential health hazards.

2. SREL supervisors will evaluate their proposed activities for occupational health hazards.

3. The SREL Safety Services is responsible for:
   a) Conducting regularly scheduled walk through inspections of SREL facilities to identify and evaluate potential health hazards.
   b) Arranging for industrial hygiene monitoring and consultation when necessary.
   c) Communicating written reports indicating the status of identified occupational health hazards and monitoring results.

3.8.2 Hearing Conservation Program (HCP)

The SREL Industrial Hygiene Program includes a specialized Hearing Conservation Program (HCP) which is designed to protect the hearing of employees exposed to occupational noise at or above the occupational noise exposure limits as set forth by the American Conference of Governmental Industrial Hygienists Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices (most current edition). Procedures detailing the responsibilities, training requirements, and implementation of the SREL HCP may be found in SREL Safety Programs and Procedures, SREL Hearing Conservation Program document (note: to be made an SREL controlled document and document number will be included in final draft of safety manual).

3.8.3 Respiratory Protection Program

SREL participates in The University of Georgia's Respiratory Protection Program. A description of the program and the associated requirements is found in The UGA Policy and Procedures Manual, Environmental Safety Division, Environmental Safety Policy and Procedures sections: Respiratory Protection Program located at the following URL's:

http://www.busfin.uga.edu/app/esd/envsafpro.htm#procedure 12

http://www.busfin.uga.edu/app/esd/envsafpol.htm#policy 16 .

*3.9 *ERGONOMICS PROGRAM AND RESPONSIBILITIES*

Ergonomics is defined as fitting the workplace to the worker and examining the interaction between the worker and his/her environment. Applying ergonomic principles can help reduce the risk of injuries or illnesses for those who work with computers, in laboratories, and in jobs that require repetitive activities or heavy materials handling.

The purpose of the ergonomics program is to reduce or eliminate hazards that contribute to the development of Cumulative Trauma Disorders (CTD's)--a class of disorders that are caused, precipitated, or aggravated by repetitive motions. Ergonomics should not be seen as a one-time effort; it is a continuous, on-going approach used in optimizing the working environment.

One of the key aspects of any ergonomics program is identifying and educating employees who have a high risk of developing cumulative trauma disorders. Early identification of symptoms with prompt intervention helps prevent more serious or chronic problems.

The guidelines, outlined in Appendix A, Attachment 1: Ergonomic Guidelines, have been prepared to assist supervisors and personnel in identifying potential ergonomic hazards and addressing them in a way that will reduce the risk of personnel injury related to ergonomic hazards.

SREL Safety Services is available to perform workstation and worksite evaluations, and can provide additional training that addresses specific ergonomic hazards of concern to SREL personnel.

3.9.1 SREL Personnel

SREL personnel are also responsible for following established procedures or instructions from their supervisor that are designed to reduce the risk of developing cumulative trauma disorders. Personnel are encouraged to examine their work environment and job activities for potential risk for cumulative trauma and injury.

3.9.2 Management

SREL management plays a leading role in the implementation of strategies to control cumulative trauma disorders in the workplace. Managers and supervisors at all organizational levels are encouraged to implement strategies to minimize the risk of cumulative trauma disorders. These include:

1. Performing or requesting periodic risk assessments to identify ergonomic hazards
2. Providing resources (as available) to implement ergonomic solutions
3. Purchasing furniture that has appropriate adjustment flexibility
4. Encouraging supervisors to implement steps to control CTD's in the workplace
5. Providing for ergonomic awareness training of supervisors

3.9.3 Supervisors

Supervisors are encouraged to provide employees with appropriate ergonomics training, reinforcement, assistance, and evaluations (where appropriate). There are several ways this can be accomplished:

1. Maintain an awareness of CTD risks

2. Have the work environment appropriately evaluated for proper ergonomic practices and conditions
3. Provide proper workstations and assisting devices
4. Promptly report all employee injuries and/or employee complaints regarding cumulative trauma disorder symptoms to SREL Safety Services
5. When necessary, seek assistance from SREL Safety Services regarding ergonomic issues
6. Provide adequate recovery time by allowing employees engaged in highly repetitive tasks the opportunity for frequent, short, alternative work activities or breaks
7. Provide for ergonomics awareness training of personnel which they supervise

3.9.4 SREL Personnel

SREL personnel shall promptly report ergonomic problems to their supervisors. Prompt implementation of workplace changes can significantly reduce the potential for severe injuries or illnesses. SREL personnel are expected to:

1. Use ergonomically appropriate work habits
2. Use all ergonomically designed tools and furniture which may be provided for their use
3. Make effective use of recovery periods
4. Follow ergonomic recommendations

3.9.5 SREL Safety Services

SREL Safety Services is committed to reducing and eliminating health and safety risks to SREL personnel. With this goal in mind SREL Safety services is expected to:

1. Coordinate the ergonomics program to reduce cumulative trauma injuries at SREL
2. Provide ergonomic evaluations and guidance on modifying the workplace to minimize the potential for injuries and illnesses
3. Provide, arrange, or recommend ergonomics training for SREL personnel and supervision
4. Analyze and report trends in injury or incidence rates, and in injury severity
5. Evaluate individual and area workstations upon request
6. Provide assistance and advice on the selection of ergonomically sound furniture and equipment

CHAPTER 4. RESEARCH OPERATIONS SAFETY

4.1 AUTHORITY AND RESPONSIBILITIES

4.1.1 Laboratory Custodians

As more laboratory space becomes involved in multi-investigator usage, a clear line of safety responsibility becomes necessary. While an individual custodian for each lab must be assigned, it is hoped that the custodian will work diligently with all users of the common laboratory space to ensure mutual respect for the safety and compatibility of all activities conducted in that laboratory. The following authorities and responsibilities are designated to the custodian of any space, shared or individual.

Laboratory Custodians have Authority to:

- Approve personnel who are authorized to use the laboratory.
- Approve operations in the laboratory.
- Approve equipment, supplies and chemicals that are brought into the laboratory.
- Cease any unsafe or inappropriate operations in the laboratory.

Laboratory Custodians are Responsible for Ensuring that:

- Laboratory operations are conducted in a safe manner.
- Work performed in the laboratory is in accordance with the laboratory's Chemical Care and Handling Plan.
- Only authorized personnel use the laboratory.
- All warning signs, policies, procedures, and material safety data sheets are current and accessible.
- All personnel who use the laboratory are properly trained and knowledgeable about hazards in the laboratory.
- Laboratory equipment and facilities are in proper working order.
- Corrective actions are taken to address facility safety concerns in the laboratory.

4.1.2 SREL Safety Services

The SREL Safety Services is responsible for:

1. Reviewing Project Safety Appraisal Forms.
2. Reviewing Laboratory Specific Chemical Care and Handling Plans.
3. Conducting periodic safety inspections and identifying potential occupational health hazards.
4. Initiating corrective action for identified occupational health and safety hazards through submission of work order requests or notification to the appropriate supervisory personnel.
5. *Approving laboratory chemical purchases.
6. *Surveying laboratory fume hoods for adequate airflow semiannually.
7. Excessing chemicals that are useable, but no longer needed.

4.1.3 SREL Research Supervisors

1. In addition to supervisory responsibilities identified in section 1.4, Part 4 and section 3.4 through 3.6 of the SREL Safety Manual, the UGA Laboratory Safety Manual specifies responsibilities with respect to supervision of laboratory facilities.
2. Supervisory responsibilities for SREL Field Operations are identified in section 1.4, Part 4. of the SREL Safety Manual.
3. SREL Faculty supervisors are responsible for assuring that Project Safety Appraisal forms and laboratory Specific Chemical Care and Handling Plans related to their research activities are prepared, updated, and submitted to SREL Safety Services for review.
4. In addition to other safety related supervisory responsibilities, laboratory supervisors are responsible for assuring that their operations are conducted in accordance with the following safety standards:
   a) ANSI/NFPA 45 -Fire Protection for Laboratories Using Chemicals
   b) The University of Georgia Hazardous Chemical Protection Communication (Right to Know) Plan
   c) UGA Biosafety Manual
   d) UGA Laboratory Safety Manual
   e) UGA Laboratory Closeout Procedures

4.2 EXEMPTIONS FROM UGA LAB SAFETY POLICY

1. Emergency numbers specified in the UGA Laboratory Safety Manual are not relevant to SREL operations. In the event of emergencies on SRS, SREL personnel should immediately contact the SRSOC by phone (3-3911) or by two-way radio.

2. SREL is exempt from the UGA Hazardous Materials Program as specified in Section 3 of the UGA Laboratory Safety Manual. Hazardous waste disposal at SREL is coordinated through SREL Safety Services

1. SREL is exempt from the UGA Waste Minimization Program. SREL personnel will comply with the SREL Waste Minimization Plan

4.3 LABORATORY SAFETY

Standard laboratory operating procedures and associated laboratory safety information are located in the UGA Laboratory Safety Manual (http://www.esd.uga.edu/ess/LaboratorySafetyManual.html). Requirements and guidelines for working with pathogenic microorganisms or recombinant DNA technologies are specified in the UGA Biosafety Manual.(http://www.ovpr.uga.edu/bio/bsm/bsm_toc.html)

4.3.1 *Compressed Gas Cylinders

1. Do not remove or change any markings stamped on the cylinders.
2. Ensure that compressed gas cylinders have standard caps and that the caps are in place when the cylinder is stored. If cylinders are delivered without caps, do not handle them until caps are procured.
3. Always chain or strap cylinders in place, whether you are using or storing them. Do not drop cylinders or let them strike each other.

4. Ensure that the cylinder's protective metal cap is securely in place to protect the valve, or that a regulator is in place. Ensure that the cap is in place when moving the cylinder.
5. Always use an approved hand truck when transporting cylinders. Never use a cylinder as a roller or support, or for any purpose other than to contain gas.
6. Do not store cylinders containing flammable gases near oxidizing gases. There must be a minimum distance of 20 feet or separation by a non-combustible barrier at least 5 feet high having a fire resistance rating of at least one-half hour.
7. Store compressed gas cylinders in an upright position and securely fastened by supports, individually or collectively.
8. Tag cylinders to indicate when they are **Full**, **In Use**, or **Empty**.
9. If a cylinder containing toxic or flammable gas leaks, close the valve if possible, evacuate the area, and notify the SREL Safety Services immediately.
10. Do not use a cylinder without the proper pressure-reducing regulator.

4.3.2 Lasers

Use of lasers in SREL research should be coordinated and reviewed through the SREL Laser Safety Officer. The SREL Laser Safety Program will be operated in accordance with ANSI Z136.1 Safe Use of Lasers. The SREL EH&S Manager serves as the SREL Laser Safety Officer.

4.4 FIELD OPERATIONS SAFETY

4.4.1 Remote Locations

The following rules apply to SREL personnel performing field work at remote locations on the SRS where SRSOC emergency announcements cannot be heard.

1. SREL personnel will use the buddy system when specified in the applicable Project Safety Appraisal Form.
2. Personnel about to perform field work will obtain a two-way radio from their program or the SREL maintenance group, and ensure that it is in working order. Personnel will keep these radios on while in the field.
3. When making emergency notifications to the SRSOC, SREL personnel will identify their SRS location using the SRS Emergency Response Grid Map. Copies of the SRS Emergency Response Grid Map are available from SREL Safety Services.
4. In sitewide emergencies that affect personnel at field locations, the SRSOC will notify field personnel of the emergency through general broadcast over SRS two-way radios.

4.4.2 Contaminated Field Sites

SREL personnel should be aware that the SRS is a designated CERCLA site containing radioactive and hazardous chemical contaminants. SREL field personnel should consult the site contamination map located in buildings 737-A and 772-26B prior to entering unfamiliar field sites. Although many contaminated field locations are clearly marked and characterized, the possibility of encountering contaminants in other areas exists. Personnel should use good hygiene practices when returning from field sites (e.g. washing hands, cleaning field equipment).

4.4.3 Harmful Plants and Animals

The following list includes some of the animals and plants which present health or safety hazards and might be encountered on the SRS:

Animals	Plants
Feral Pigs	Poison Ivy
Alligators	Poison Sumac
Eastern Coral Snake	Poison Oak
Pygmy Rattlesnake	
Copperhead	
Canebrake Rattlesnake	
Cottonmouth	
Some insects and spiders	

See section 2.4.1 for procedures to follow for snakebites.
Rabies vaccines are recommended for all personnel working with wild mammals.
To report nuisance animals such as stray or injured animals on SRS contact the SRSOC at 3-3911.

4.4.4 *Firearm Use

Use of firearms by SREL personnel will be in accordance with the South Carolina Hunter Education Manual (most recent edition). Personnel who plan to use firearms in their research activities should contact SREL Safety Services.

4.4.5 *Chain saw Use

SREL personnel using a chain saw are required to take the course on the safe use of chain saws offered by the Savannah River Forest Station.

4.4.6 All Terrain Vehicles

SREL personnel who drive all-terrain vehicles must successfully complete operational training provided by the vehicle manufacturer or a training provider designated as qualified by the vehicle manufacturer.

4.4.7 Portable Ladders and Scaffolding

Use of portable ladders and scaffolding for SREL research activities will be conducted in accordance with the following safety standards:

- CFR 1910.25 Portable wooden ladders
- CFR 1910.26 Portable metal ladders
- CFR 1910.28 Safety requirements for scaffolding

4.4.8 *Water Safety

1. When personnel are required to work over or adjacent to water where the danger of drowning exists, supervisors will assure that:
    a) Personnel are provided with a Coast Guard-approved life jacket or buoyant work vest.
    b) Life jackets are inspected before each use and defective jackets are not used.
    c) Personnel are instructed in the proper use of life jackets.
2. Boating:
    a) SREL boat operators are responsible for operating water craft in accordance with South Carolina Boating regulations as specified by the S.C. Department of Natural Resources.
    b) Only personnel who have been certified by the S.C. Department of Natural Resources or have equivalent certification shall operate motorized boats.
    c) Never overload boats. U.S. Coast Guard regulations prohibit loading any boat in excess of the limit specified on the manufacturer's nameplate. Always maintain a safe margin well below the specified limit, considering weather and other conditions.
    d) The boat operator is responsible for safety practices on the boat.
    e) If nighttime boating is necessary, another person must accompany the operator. Carry a light when traveling at night to show your position, to check obstructions, to read map and compass, etc.
    f) Small Power Vessels
        i) Never exceed the boat manufacturer's recommended horsepower.
        ii) Carry fire extinguishers and first aid kits on all powered boats.
        iii) Shut off the €engine before refueling. Do not smoke when refueling.
    g) Non-power Watercraft
        i) When possible, enter or leave a canoe from the side rather than the end, and always step in the center of the craft. Steady yourself while moving in a canoe by placing one hand on each gunwale.
        ii) When using an anchor, attach it by a rope to the bow of the craft and not to either side. Exercise care in lowering and raising the anchor.
        iii) Keep paddles, oars and oarlocks in good condition. Carry spare paddles, oars and oarlocks on long trips.
3. Emergency procedures
    a) Do not travel during periods of high winds and rough water, or if a storm threatens.
    b) If your boat capsizes and you cannot get a life preserver, hang onto a boat, oar, or anything else that is floating nearby until help comes. Take off outer clothing only if it hampers movement. Do not panic.
    c) Do not attempt to swim to shore from an overturned craft. Hang onto the craft until it drifts or can be paddled to shore, or until help arrives.
    d) Do not travel in an open boat, raft, or canoe during a lightning storm. On first sighting an approaching storm, proceed immediately to the closest shore and beach the craft.

4. Electrofishing and airboats: Each person operating electrofishing boats and airboats must be trained in the hazards associated with these vessels. Always adhere to manufacturer safety precautions. Training documentation must be submitted to the SREL Safety Services.

5. SCUBA: All SREL personnel must comply with the University of Georgia Dive Safety Manual . Personnel performing SCUBA diving must receive certification from a nationally recognized

SCUBA training program. Proof of certification must be submitted to the SREL Safety Services.

4.5 RADIATION SAFETY

SREL personnel are at risk of injury due to exposure to ionizing radiation during operations utilizing X-ray machines, radioisotopes, and sealed sources. This hazard also exists when performing work on contaminated areas of the Savannah River Site and other locations.

SREL personnel performing work that exposes them to ionizing radiation are responsible for being familiar with and complying with the following requirements with respect to SREL Radiation Safety:

- 10 CFR 835 Occupational Radiation Protection
- ANSI N43.3 - 1993 General Radiation Safety Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 MeV
- 10 CFR 20.1906 Procedures for receiving and opening packages (containing radioactive material)
- 10 CFR 20, Subpart K Waste Disposal

The SREL EH&S Manager serves as the SREL Radiation Safety Officer (RSO). All purchase requests for radioisotopes must be approved by the SREL RSO.

4.5.1 Storage and Use of Potential Radioactively Contaminated Environmental Samples

1. Policy

   SREL personnel will assure that all radioactively contaminated environmental samples that exceed SRS site limits (5000 dpm beta/gamma at the surface), as measured with site-supplied Ludlum Model 12-110 radiation monitoring instrument, are stored and utilized only in SREL designated Radiological Buffer Areas (RBA). Exceptions are permitted for transfer and analysis as indicated in the SRS 5Q manual.

2. Procedure

   a) Upon delivery of potentially radioactively contaminated environmental samples to any SREL facility, SREL personnel will monitor the samples with a Ludlum Model 12-110 radiation monitoring instrument. If the sample exceeds the site limit (5000 dpm beta/gamma at the surface), it will immediately be placed in an RBA by a Rad Worker I or II trained individual. The sample will be treated as radioactive material as per the SRS 5Q manual.

   b) Any sample that does not exceed site limits may be stored and utilized in non-radiation areas at SREL. However, if the sample is processed (e.g. dehydrating, separating organs) in a manner as to increase the concentration of radioactive contamination such that the material exceeds site limits, the sample will immediately be placed in an RBA by an authorized Rad Worker. The sample will be treated as radioactive material as per the SRS 5Q manual.

4.5.2 Environmental Samples Collected from Areas within the Former Soviet Union

All environmental samples collected from areas within the former Soviet Union shall, upon delivery to SREL, be placed in a Radioactive Materials Area. A determination by WSRC RadCon personnel, will then be made regarding the release of these materials.

CHAPTER 5. MAINTENANCE AND CUSTODIAL OPERATIONS

5.1 AUTHORITIES AND RESPONSIBILITIES

1. The **SREL Assistant Director** or SREL maintenance personnel will forward any documents relating to engineering plans and specifications for modifications to current SREL facilities, or the construction of new SREL facilities to the **SREL EH&S Manager** for review.

2. The **SREL Head of Building Maintenance** and **Design Engineer** are responsible for the following:
   a) maintaining written procedures for Lock Out/ Tag Out of hazardous energy (29 CFR 1910.147) and Confined Space Entry (29 CFR 1910.146).
   b) assuring that all modifications to existing facilities and construction of new facilities are performed in accordance with the following standards (versions specified in Appendix C: Attachment 2):
      i) ANSI/NFPA 101 - Life Safety Code
      ii) ANSI Z358.1 -1990 Emergency Eyewash and Shower Equipment
      iii) ANSI/NFPA 70 - National Electrical Code
      iv) ASME/NFPA B31.1 - Power Piping
      v) ASME/NFPA B31.8 - Gas Transmission and Distribution Piping Systems
      vi) 29 CFR 1910.27 Fixed ladders
      vii) University System of Georgia Design Criteria for Laboratory Furniture and Fume Hoods -1996
3. The **SREL Safety Services** is responsible for:
   a) reviewing SREL facility construction or renovation plans.
   b) conducting periodic facility safety inspections and identifying occupational health and safety hazards or unsafe practices.
   c) excessing chemicals that are usable but no longer needed.
   d) initiating corrective action for identified occupational health and safety hazards through submission of work order requests or notification to the appropriate supervisory personnel.
4. *The **maintenance supervisor** is responsible for : .
   a) being familiar with all procedures for safe use and guarding of machines, personal protective equipment, and shielding against possible injury to other personnel or visitors.
   b) maintaining training records for all authorized users of tools and equipment.
   c) posting signs indicating the use of powered machines by "Authorized Personnel Only" and requiring the personnel under his/her supervision to assist in the enforcement of this policy.
   d) designating a person to be responsible for general management of a specific area.
   e) conducting periodic safety meetings with personnel.
   f) posting abbreviated instructions and safety warnings for each fixed power machine.
   g) providing job-specific training for maintenance personnel.
   h) assuring that all work performed by maintenance personnel is in accordance with the following standards (versions specified in Appendix C: Attachment 2):
      i) 29 CFR 1910.146 Permit Required Confined Spaces
      ii) 29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)
      iii) 29 CFR 1910.25 Portable wooden ladders
      iv) 29 CFR 1910.26 Portable metal ladders
      v) 29 CFR 1910.28 Safety requirements for scaffolding

vi) 29 CFR 1910 SubPart F Powered platforms, manlifts, and vehicle-mounted work platforms
vii)ANSI/NFPA 51B - Standard for Fire Prevention in Use of Cutting and Welding Processes
viii)ASME/ANSI B56.1 - Safety Standard for Power Industrial Low Lift and High Lift Trucks

5. **Maintenance personnel** are responsible for:
   a) adhering to OSHA Lock Out /Tag Out standards (29 CFR 1910.147) when servicing or
   b) performing maintenance on machines and equipment from which hazardous energy may be released.
   c) adhering to OSHA Confined Space standards (29 CFR 1910.146) when working in areas or spaces which the standards definition of a confined space.

*5.2 *COMPRESSED GAS CYLINDERS*

1. Do not remove or change any markings stamped on the cylinders.
2. Ensure that compressed gas cylinders have standard caps and that the caps are in place when the cylinder is stored. If cylinders are delivered without caps, do not handle them until caps are procured.
3. Always chain or strap cylinders in place, whether you are using or storing them. Do not drop cylinders or let them strike each other.
4. Ensure that the cylinder's protective metal cap is securely in place to protect the valve, or that a regulator is in place. Ensure that the cap is in place when moving the cylinder.
5. Always use an approved hand truck when transporting cylinders. Never use a cylinder as a roller or support, or for any purpose other than to contain gas.
6. Do not store cylinders containing flammable gases near oxidizing gases. There must be a minimum distance of 20 feet or separation by a non-combustible barrier at least 5 feet high having a fire resistance rating of at least one-half hour.
7. Store compressed gas cylinders in an upright position and securely fastened by supports, individually or collectively.
8. Tag cylinders to indicate when they are **Full**, **In Use**, or **Empty**.
9. If a cylinder containing toxic or flammable gas leaks, close the valve if possible, evacuate the area, and notify the SREL Safety Services immediately.
10. Do not use a cylinder without the proper pressure-reducing regulator.

*5.3 * ELECTRICAL EQUIPMENT*

5.3.1 Equipment Grounding

SREL Maintenance will ensure that all high-voltage (600 volts or greater) equipment is grounded in accordance with the provisions established in the National Electric Code. SREL Maintenance will ensure that all nominal-voltage (less than 600 volts) equipment that is not considered to be portable is grounded in accordance with the National Electrical Code. This will include any equipment that is intended for use in a laboratory rather than in the field.

5.3.2 Equipment Inspection

Power tools and other equipment or extension cords which may be used outdoors will be inspected annually and tagged by the SREL Electrician.

The SREL Electricians inspection of electrical cords will include the following:

1. Cords
    a) Insulation and plugs unbroken?
    b) Cords protected against physical damage and/or exposure to chemicals?
    c) All cords will be dated at time of the test.

2. Grounding
    a) Three-wire plug extension cord (if a three-wire tool)?
    b) Defects or minor shocks reported?
    c) Ground pin in place?

5.3.3 General Electrical Safety Rules

SREL maintenance personnel will follow the following rules for electrical equipment:

1. Post clearly visible warning signs for high-voltage equipment.
2. Ensure high-voltage circuits that are exposed necessarily during operation are isolated from ground.
3. Use three-wire cords with three-wire polarized plugs and U-shaped grounding blades.
4. Label all outlets on the same circuit.
5. When working with flammable liquids, ensure that adequate bonding and grounding are in place. Static charges can be sufficient to initiate combustion.

APPENDIX A: Supplemental Information

Attachment 1: Ergonomic Guidelines
Attachment 2: SREL Safety Standards Set
Attachment 3: Referenced SREL Staff and Contact Information
Attachment 4: SRS Threat Checklist

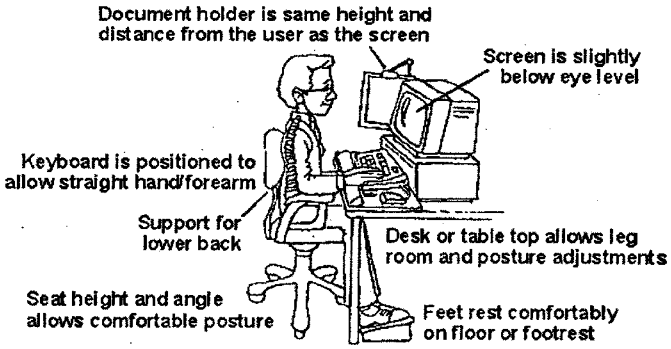
Attachment 1: Ergonomic Guidelines

Ergonomic Guidelines

1.0 Video Display Terminal Workstation Considerations

Improper configuration and use of computer workstations are frequent contributors to the development of CTD's. A poorly designed workstation certainly has a negative impact on the user's comfort and productivity. Since personal computers have become indispensable in all aspects of SREL's operations, many personnel are spending a large portion of their time at a keyboard. It is essential that workstations be properly designed, adjusted, and used. Positive improvements may be as simple as repositioning furniture and equipment, or purchasing ergonomically designed replacements. See Figure 1 below for an example of a well-designed workstation.

A Well Designed Computer Workstation


Document holder is same height and distance from the user as the screen
Screen is slightly below eye level
Keyboard is positioned to allow straight hand/forearm
Support for lower back
Desk or table top allows leg room and posture adjustments
Seat height and angle allows comfortable posture
Feet rest comfortably on floor or footrest

The following guidelines should be carefully considered when arranging or modifying existing workstations or planning new workstations.

Chair: Chairs should have an adjustable back to provide support for the lumbar region of the back and trunk. High-back chairs provide extra upper back support. Select a chair with easily adjustable height to permit the feet to rest flat on the ground with the upper legs parallel to the floor. A footrest may be needed by some people to achieve this position. Chairs should have a five-star base and casters compatible with the floor surface. T-armrests with adjustable height and width are recommended for intensive computer users. When seated, the seat pan should not hit the back of knee.

Work Surface: Work surfaces should be large enough to accommodate all the computer equipment, including a wrist rest in front of the keyboard and adequate viewing distance between the monitor and operator's eyes. A keyboard tray can be used to increase depth and to provide proper keying level. There should also be enough room under the work surface to allow free leg movement. The height of the work surface should allow the forearms to be parallel with the floor when working at the computer, while not forcing the shoulders to be elevated. A footrest can assist in supporting the feet as well, allowing the employee to sit back in his/her chair.

Keyboard/Input Device: The keyboard and input device (mouse or trackball) should be at the same level and in front of the operator. The height of the keyboard and input device should allow the operator to position their forearms and hands parallel to the floor. Achieve this by adjusting the height of the chair and/or table, or by using an adjustable tray. A padded wrist rest for the keyboard and input device should be used to prevent the operator's wrists from coming in contact with the work surface when the arms are at rest. Avoid overreaching by keeping the input device close to the body.

Monitor (Terminal): Position the monitor directly in front of the operator with the screen at approximately eye level. One exception is bifocal wearers who may prefer a slightly lower monitor level. Monitors should have good contrast, sharp focus, and be free from flickering and glare to minimize eye strain.

Document Holder: Position the document holder at eye level, close to the monitor.

Phone Head Set: Head sets reduce awkward neck and shoulder postures, notably by eliminating the habit of cradling the phone between the shoulder and chin. Head sets are particularly beneficial for people who work on the phone and computer simultaneously.

Carpet Mat: Carpet mat is helpful when the operator moves around often at the workstation.

Lighting: Excessive overhead lighting can cause glare and eye discomfort. Dimming overhead lights and use of a task lamp can reduce eye fatigue. Monitor shades and glare screens also reduce glare. Adjust monitor contrast and brightness for maximum personal comfort.

2.0 Hand Tool Ergonomics

Proper attention to selection, design, and layout of tools can help minimize the risk of developing CTD's. Four basic principles can be applied when working with hand tools:

1. Avoid high contact stress and static exertions.
2. Avoid extreme or awkward joint positions (i.e., bent wrist position).
3. Avoid repetitive finger action.
4. Avoid tool vibration (select power or pneumatic tools with built-in vibration dampening whenever possible).

The following guidelines can help with the selection and design of tools.

Handles should be provided whenever possible. A properly designed handle isolates the hand from contact with the tool surface, enhances tool control, and increases mechanical advantage while reducing the amount of required exertion. Tool handles should be non-porous, non-slip, and non-conductive.

Soft coverings on a tool handle protect the hands from heat and cold and help reduce pressure points and slipperiness of the grip.

Select hand tools that fit the hands of the worker. A tool that is too large or too small will produce stress in the hand and wrist. As a rule, the ideal handle diameter for a man is 1.5 inches, and 1.3 inches for a woman.

Tools with a pistol grip should be used where the tool axis must be horizontal. A straight grip should be used where the tool axis is vertical, or where the direction of force is perpendicular to the work plane. Bent tool grips allow the wrist to maintain neutral postures.

For trigger-activated tools, choose a grip size that allows activation with the middle part of the fingers. Activation with the fingertips can create nodules on nerve sheaths and cause trigger finger.

The majority of commercially available tools are designed for the right hand. Ideally, tools should be symmetrical or easily altered to be used by either the right or left hand.

The provision of automatic spring-opening on tools such as scissors and pliers will enable the worker to use the strong hand-closing muscles rather than the weak hand-opening muscles.

The following are some correct positions for holding hand tools (Figure 2.):

Correct Positions for Holding Hand Tools

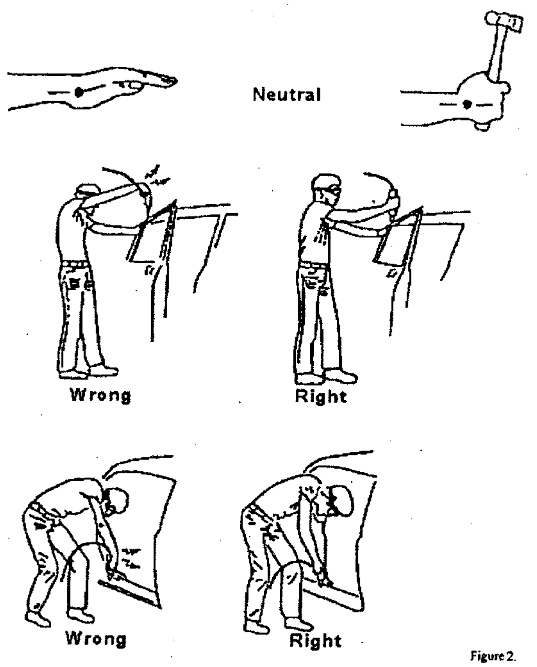


Figure 2.

3.0 Other Workplace Ergonomics Hazards

There are a variety of other work settings where ergonomics practices are important (i.e., manual material handling, custodial work, maintenance, grounds maintenance, etc.). The following information identifies ways in which SREL personnel might reduce or eliminate these other types of ergonomic related hazards.

3.1 Principles For Manual Material Handling (MMH) Work Design

1. Eliminate the need for heavy MMH
2. Decrease MMH demands
3. Minimize stressful body movements

3.10 Eliminate The Need For Heavy MMH

The optimal solution to MMH-related problems is to eliminate the need for heavy work MMH. Two means exist to accomplish this:

1. The use of mechanical aids such as hoists, lift trucks, lift tables, cranes, elevating conveyors, gravity dumps, and chutes can eliminate (or at least significantly decrease) stresses due to MMH.
2. To eliminate heavy MMH, change the work area layout to make all materials available at work level. Accomplishing this objective can involve either a change in work level height or the level of the worker.

3.11 Decrease MMH Demands

If MMH cannot realistically be eliminated, then attempts should be made to decrease the MMH demands of the job. There are several means by which this second principle of work design can be accomplished:

1. Decrease the weight of the object being handled. The weight of the object can be reduced by assigning the handling to two or more people, by distributing the load into two or more containers, or by reducing the capacity of the container or the container weight (i.e., using plastic drums rather than metal drums).
2. Change the type of MMH activity and the demands of the job can be decreased. Lifting, lowering, pushing, pulling, carrying, and holding are all types of MMH activity. It is preferable for a job to require lowering rather than lifting, to require pulling rather than carrying, and to require pushing rather than pulling. (For instance, make several trips with lighter loads and use a cart or dolly whenever possible.)
3. Changes in the work area layout can decrease MMH-related demands. Some ways in which this can be accomplished include: minimizing the horizontal distance between the starting and ending points of a lift, limiting stacking heights to the shoulder height of the worker, and keeping heavy objects at the knuckle height of workers.
4. Maximizing the time available to perform the job can decrease job demands. Accomplish this by reducing the frequency of the lift, and by incorporating work/rest schedules or job rotation programs into the work design.

3.12 Minimize Stressful Body Movements

1. The third principle of work design is to minimize stressful body movements required by the job. Specifically, bending and twisting motions imposed on the worker should be reduced.
2. Reduce bending by locating objects to be handled within the arm-reach envelope of the worker. Provide all material at the work level of the worker. Avoid using deep shelves where the worker must bend and reach to obtain objects toward the rear of the shelves.
3. Twisting motions can also be reduced by locating objects within the worker's arm-reach envelope. **Arrange the work area to allow sufficient space for the entire body to turn and pivot with the feet.** If the worker is seated, an adjustable swivel chair should be used.
4. Design considerations should allow the worker to lift objects safely.
5. Practice and encourage the safe lifting techniques described below.

3.13 Safe Lifting and Good Body Mechanics

1. Allow the object to be handled close to the body.
2. Use devices such as handles, grips, etc., to provide better control of the object being lifted or moved.
3. Balance the contents of the containers.
4. Provide rigid containers for increased worker control of the object.
5. Avoid lifting excessively wide objects from floor level.
6. Use good body mechanics; **bend your legs, not your back, when lifting.**
7. Pivot with your feet instead of twisting your back when lifting.

3.14 Anti-fatigue Mats

Anti-fatigue mats provide additional support for the worker at standing and sit/stand workstations. Mat size should be large enough for the worker to stand entirely on the mat when at the workstation. **Select a mat free of raised or irregular surfaces that will cause concentrated forces on the feet of the worker.**

For additional information on ergonomics training or the selection of appropriate office or laboratory furniture or material handling equipment, please contact a member of SREL Safety Services.

SREL Ergonomic Guidelines adapted from University of California, San Diego ERGO Team Guidelines at
http://www-vcba.ucsd.edu/ehs/ergo.htm

Attachment 2: SREL Safety Standards Set

1. FIRE SAFETY:
University of Georgia Fire Safety Manual
ANSI/NFPA 101 - 1994 Life Safety Code
ANSI/NFPA 45 - 1996 Fire Protection for Laboratories Using Chemicals
ANSI/NFPA 30 - 1996 Flammable and Combustible Liquids Code
ANSI/NFPA 10 - 1994 Standard for Portable Fire Extinguishers
ANSI/NFPA 58 - 1995 Storage and Handling of Liquefied Petroleum Gases
SREL Safety Manual (sections 2.5, 2.7.5)

2. IONIZING RADIATION:
10 CFR 835 Occupational Radiation Protection
ANSI N43.3 - 1993 General Radiation Safety Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 MeV
10 CFR 20.1906 Procedures for receiving and opening packages (containing radioactive material)
10 CFR 20, Subpart K Waste Disposal

3. OCCUPATIONAL SAFETY:
South Carolina Boating regulations
South Carolina Motor Vehicle regulations
University of Georgia Dive Safety Manual
ANSI/NFPA 70 - 1996 National Electrical Code
29 CFR 1910.147 The Control of Hazardous Energy (Lockout/Tagout)
SREL Safety Manual (electrical safety sections 3.1#8, 3.3, 3.4, 5.3)
ANSI/NFPA-51B - 1994 Standard for Fire Prevention in Use of Cutting and Welding Processes
ASME/ANSI B31.1 - 1995 Power Piping
ASME/ANSI B31.8 - 1995 Gas Transmission and Distribution Piping Systems
SREL Safety Manual (compressed gas cylinder sections 4.3.1, 5.2)
29 CFR 1910.146 Permit Required Confined Spaces
SREL Safety Manual (water safety sections 2.7.4#5, 4.4.7)
ASME/ANSI B56.1 - 1993 Safety Standard for Powered Industrial Low Lift and High Lift Trucks
SREL Safety Manual (equipment safety sections 3.2, 3.4, 4.4.4, 4.4.5, 5.1#5)
29 CFR 1910.25 Portable wood ladders.
29 CFR 1910.26 Portable metal ladders.
29 CFR 1910.27 Fixed ladders.
29 CFR 1910.28 Safety requirements for scaffolding.
29 CFR 1910 SubPart F Powered platforms, manlifts, and vehicle-mounted work platforms.
South Carolina Hunter Education Manual - 1987

4. INDUSTRIAL HYGIENE:

The Georgia Right-to Know Law

The Public employee Hazardous Chemical Protections And Right To Know Act of 1988 Official Code Of Georgian Annotated, Title 45, Chapter 22

Georgia Department of Labor Safety Engineering Section Chapter 300-3-19 Public Employee Hazardous Chemical Protection And Right To Know Rules GEORGIA

The University System of Georgia Hazardous Chemical Protection Communication (Right To Know) Plan – 1994

UGA Policy and Procedure Manual: Chapter 91 Environmental Safety Services

- Policy 2.1 Right to Know act - 1995
- Policy 5.1 Laboratory Safety - 1995
- Policy 7.1 Hazardous Materials - 1995

UGA Biosafety Manual – 1988

UGA Laboratory Safety Manual - 1979

University System of Georgia Design Criteria for Laboratory Furniture and Fume Hoods –1996

American Conference of Governmental Industrial Hygienists, Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices(BEIs) (most recent edition)

ANSI Z358.1 -1990 Emergency Eyewash and Shower Equipment

ANSI Z136.1 - 1993 Safe Use of Lasers

SREL Safety Manual (sections 1.4.4e; 2.4.1; 2.6; 3.1#7,12,13; 3.5;4.1.3#5,6; 5.2#9)

5. ERGONOMICS:

SREL Safety Manual (sections 1.4.4d, 3.9)

6. SITE-WIDE EMERGENCIES:

SREL Safety Manual (sections 2.7.2 - 2.7.5)

Attachment 3: Referenced SREL Staff and Contact Information

Dr. Paul Bertsch
SREL Director
Phone: (803)-725-2959

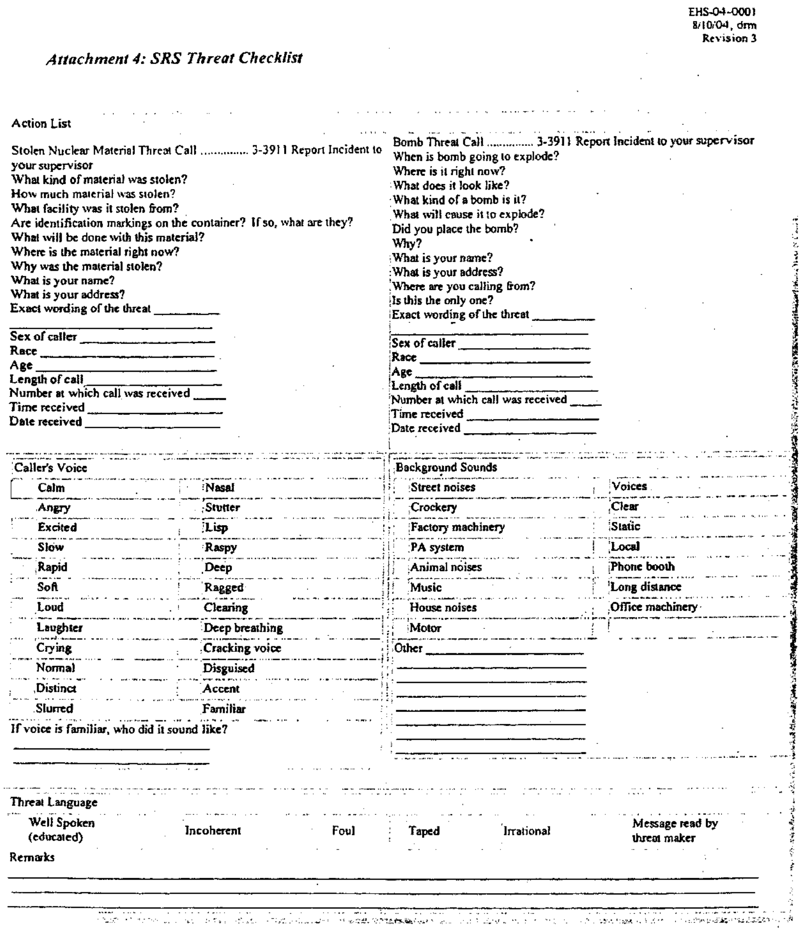
Robert I. Nestor
SREL Assistant Director/ SREL Emergency Coordinator
Phone: (803)-725-3026
Pager: (803)-725-PAGE, #13233

Jerry A. Garvin
SREL Head of Building Maintenance
Phone: (803)-725-8240
Pager: (803)-725-PAGE, #18705

SREL Safety Services Personnel

Donald R. Mosser
SREL Environmental Safety and Health Manager
Phone and Voice Mail: (803)-725-50063
Pager: (803)-725-PAGE, #19190
E-mail: SREL GroupWise or mosser@srel.edu

Vivian Gail Dicks
SREL Laboratory Safety Officer
Phone and Voice Mail: (803)-725-9860
e-mail: SREL GroupWise or dicks@srel.edu



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Revision 3

Attachment 4: SRS Threat Checklist

Action List

Stolen Nuclear Material Threat Call .... 3-3911 Report Incident to your supervisor
What kind of material was stolen?
How much material was stolen?
What facility was it stolen from?
Are identification markings on the container? If so, what are they?
What will be done with this material?
Where is the material right now?
Why was the material stolen?
What is your name?
What is your address?
Exact wording of the threat __________
____
Sex of caller ____________________
Race ____________________
Age ____________________
Length of call ____________________
Number at which call was received _____
Time received ____________________
Date received ____________________

Bomb Threat Call .... 3-3911 Report Incident to your supervisor
When is bomb going to explode?
Where is it right now?
What does it look like?
What kind of a bomb is it?
What will cause it to explode?
Did you place the bomb?
Why?
What is your name?
What is your address?
Where are you calling from?
Is this the only one?
Exact wording of the threat __________
____
Sex of caller ____________________
Race ____________________
Age ____________________
Length of call ____________________
Number at which call was received _____
Time received ____________________
Date received ____________________

Caller's Voice

Calm	Nasal
Angry	Stutter
Excited	Lisp
Slow	Raspy
Rapid	Deep
Soft	Ragged
Loud	Clearing
Laughter	Deep breathing
Crying	Cracking voice
Normal	Disguised
Distinct	Accent
Slurred	Familiar

If voice is familiar, who did it sound like?
____
____

Background Sounds

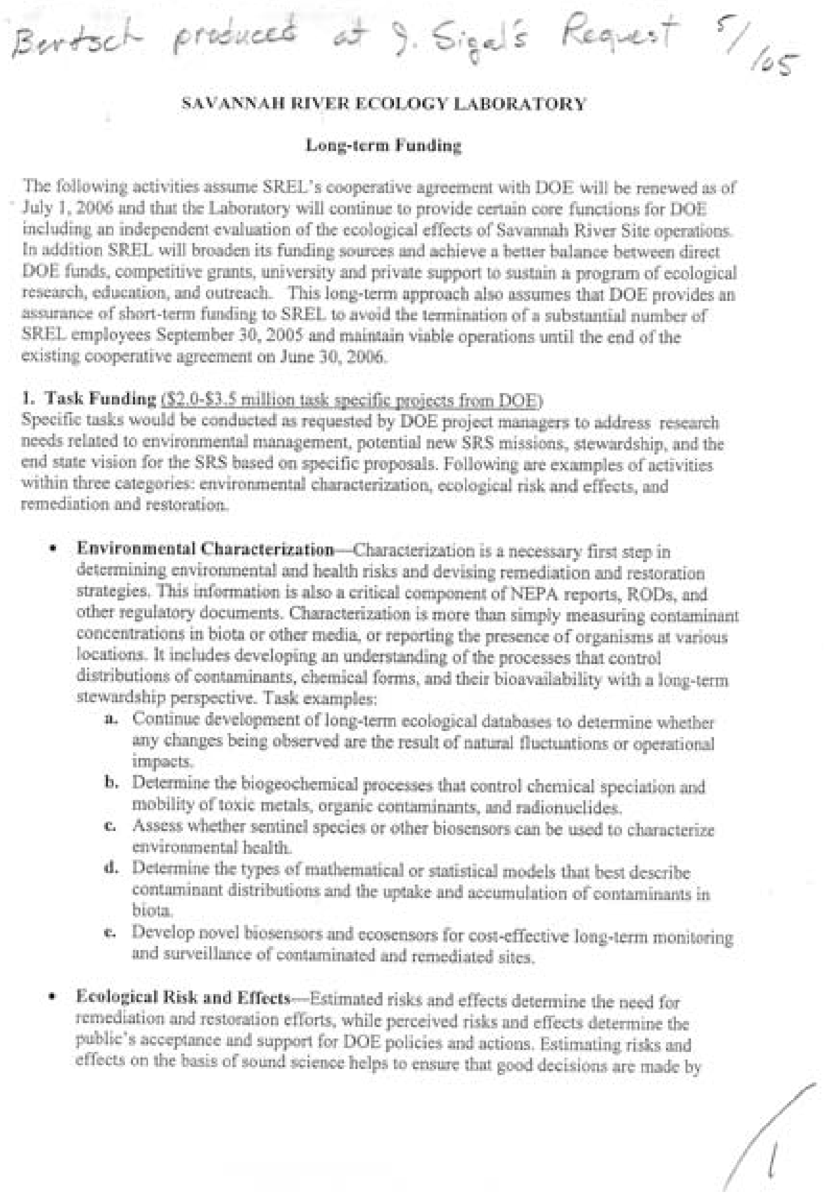
Street noises	Voices
Crockery	Clear
Factory machinery	Static
PA system	Local
Animal noises	Phone booth
Music	Long distance
House noises	Office machinery
Motor	

Other ____________________
____
____
____
____
____
____
____

Threat Language

Well Spoken (educated)	Incoherent	Foul	Taped	Irrational	Message read by threat maker

Remarks
____
____
____



Bertsch produced at J. Sigal's Request 5//05

SAVANNAH RIVER ECOLOGY LABORATORY

Long-term Funding

The following activities assume SREL's cooperative agreement with DOE will be renewed as of July 1, 2006 and that the Laboratory will continue to provide certain core functions for DOE including an independent evaluation of the ecological effects of Savannah River Site operations. In addition SREL will broaden its funding sources and achieve a better balance between direct DOE funds, competitive grants, university and private support to sustain a program of ecological research, education, and outreach. This long-term approach also assumes that DOE provides an assurance of short-term funding to SREL to avoid the termination of a substantial number of SREL employees September 30, 2005 and maintain viable operations until the end of the existing cooperative agreement on June 30, 2006.

1. Task Funding ($2.0-$3.5 million task specific projects from DOE)
Specific tasks would be conducted as requested by DOE project managers to address research needs related to environmental management, potential new SRS missions, stewardship, and the end state vision for the SRS based on specific proposals. Following are examples of activities within three categories: environmental characterization, ecological risk and effects, and remediation and restoration.

- **Environmental Characterization**—Characterization is a necessary first step in determining environmental and health risks and devising remediation and restoration strategies. This information is also a critical component of NEPA reports, RODs, and other regulatory documents. Characterization is more than simply measuring contaminant concentrations in biota or other media, or reporting the presence of organisms at various locations. It includes developing an understanding of the processes that control distributions of contaminants, chemical forms, and their bioavailability with a long-term stewardship perspective. Task examples:
    a. Continue development of long-term ecological databases to determine whether any changes being observed are the result of natural fluctuations or operational impacts.
    b. Determine the biogeochemical processes that control chemical speciation and mobility of toxic metals, organic contaminants, and radionuclides.
    c. Assess whether sentinel species or other biosensors can be used to characterize environmental health.
    d. Determine the types of mathematical or statistical models that best describe contaminant distributions and the uptake and accumulation of contaminants in biota.
    e. Develop novel biosensors and ecosensors for cost-effective long-term monitoring and surveillance of contaminated and remediated sites.

- **Ecological Risk and Effects**—Estimated risks and effects determine the need for remediation and restoration efforts, while perceived risks and effects determine the public's acceptance and support for DOE policies and actions. Estimating risks and effects on the basis of sound science helps to ensure that good decisions are made by reducing uncertainties associated with complex environmental processes. A recent National Academy of Sciences report (1999) stated that *"Ecological risks are better characterized at the Savannah River Site than at any other Doe installation, due in part to the designation of the site as a National Environmental Research Park and the presence of the Savannah River Ecology Laboratory."* Task examples:

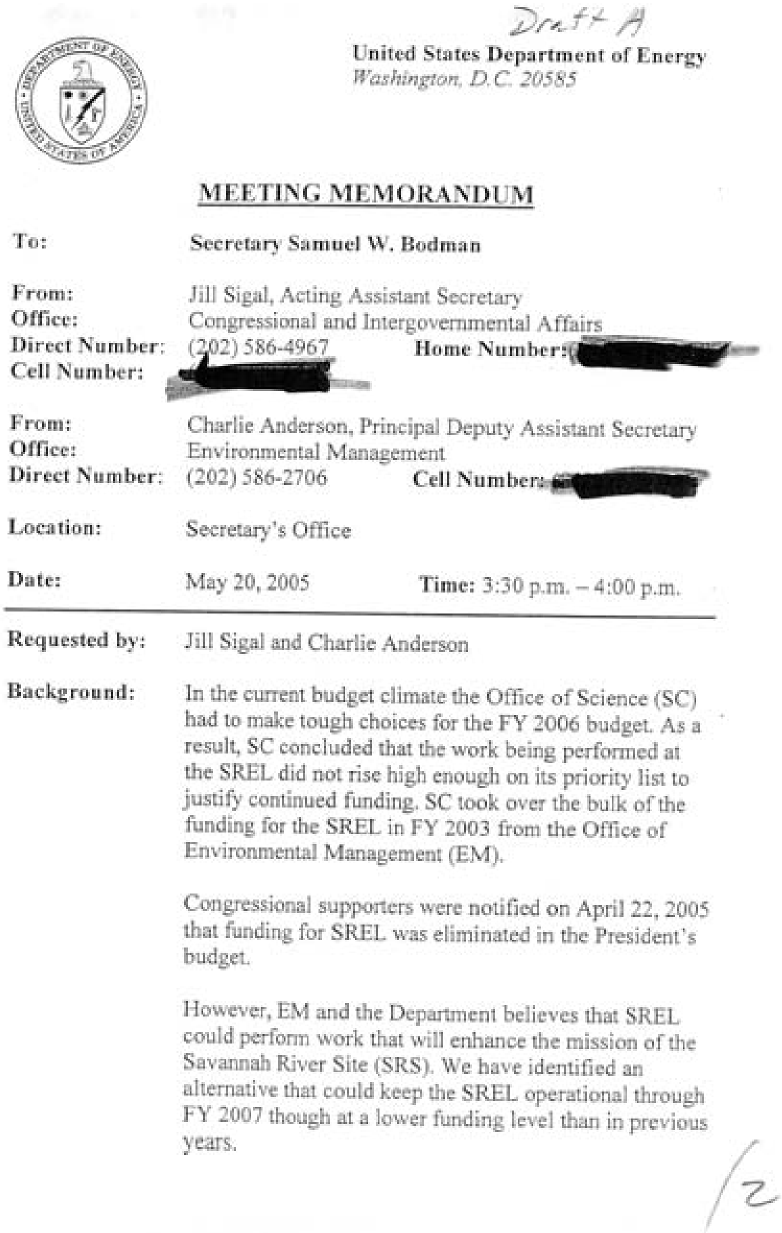
- **a.** Determine how changes in contaminant speciation influence dose-response and toxicity relationships.
- **b.** Determine how much molecular or cellular damage from a contaminant is necessary before effects become significant to individuals, populations, and communities.
- **c.** What are the potential effects and interactions from exposure to mixed contaminants?
- **d.** Define better the risks from low dose-rate, chronic exposures to radiation.
- **e.** Develop novel, cost-effective biomarkers for assessing ecological impacts on biota.

- **Remediation and Restoration**—The knowledge and expertise based at SREL are ideally suited to address the remediation and restoration of large land areas contaminated with relatively low levels of metals, organics, and radionuclides. Various types of bioremediation, natural attenuation, and *in situ* processes are applications based on scientific principles that already exist. Task examples:

  - **a.** Identify the traits of native plants and populations that best determine their suitability for use in remediation and restoration
  - **b.** Determine the sustainability of microbial transformations and other bioremediation processes over time.
  - **c.** Determine whether natural processes, such as plant succession, can be directed or accelerated to establish sustainable vegetation at lower costs on remediation sites, including waste closure caps.
  - **d.** Determine the primary mechanisms by which chemical amendments immobilize contaminants, and identify the appropriate geochemical and biological endpoints to assess sustainability.

2. External Grants and Contracts ($2-3 million estimated from various sources)
Currently SREL receives approximately $1.5 million annually in competitive external grants and contracts. An expansion in future grants and contracts in mission-related areas will be sought to enhance research, education, and outreach programs at SREL.

3. Infrastructure and Administrative Support ($2 million from EM/NNSA/DOE)
Currently, approximately $3.5 million is required to maintain the Laboratory's infrastructure and to provide the administrative support needed to operate the facility. Categories include onsite management, safety services, facility maintenance, equipment, custodial services, personnel and procurement, financial accounting and reporting, property management, computer and GIS services, library support and SRS Set-Aside management. This proposal envisions a future annual commitment of $2 million from DOE with increased funding coming from UGA and other sources.



Draft A

United States Department of Energy
Washington, D.C. 20585

MEETING MEMORANDUM

To:	**Secretary Samuel W. Bodman**
From:	Jill Sigal, Acting Assistant Secretary
Office:	Congressional and Intergovernmental Affairs
Direct Number:	(202) 586-4967 **Home Number:** [redacted]
Cell Number:	[redacted]
From:	Charlie Anderson, Principal Deputy Assistant Secretary
Office:	Environmental Management
Direct Number:	(202) 586-2706 **Cell Number:** [redacted]
Location:	Secretary's Office
Date:	May 20, 2005 **Time:** 3:30 p.m. – 4:00 p.m.

Requested by: Jill Sigal and Charlie Anderson

Background: In the current budget climate the Office of Science (SC) had to make tough choices for the FY 2006 budget. As a result, SC concluded that the work being performed at the SREL did not rise high enough on its priority list to justify continued funding. SC took over the bulk of the funding for the SREL in FY 2003 from the Office of Environmental Management (EM).

Congressional supporters were notified on April 22, 2005 that funding for SREL was eliminated in the President's budget.

However, EM and the Department believes that SREL could perform work that will enhance the mission of the Savannah River Site (SRS). We have identified an alternative that could keep the SREL operational through FY 2007 though at a lower funding level than in previous years.

/2

We propose the following alternative funding plan: EM would contribute $3 million from the SRS budget for FY 2006. In addition, the National Nuclear Security Administration and Office of Science also will provide ____$, and ____$ respectively.

Of the $3 million that EM would contribute, between $1 and $2 million would support infrastructure and maintenance. The remaining $___million would support work tasked by EM, SC, and NNSA. It is important to note that under the current scenario the Department will need to spend between $1 - $2 million to fulfill its closure responsibilities at SREL.

In FY 2007, EM would fund SREL between $1 and $2 million to continue operations in support of SRS. The extension would allow SREL time to seek funding beyond FY 2007 from DOE programs and non-DOE entities while completing its current work for the Department and continuing its independently funded research.

EM, with federal resources would also support the preparation and management of a new cooperative agreement needed for SREL to operate.

If the proposal is to move forward, the University of Georgia (lab operator) needs to agree to the reduced level of funding and to not lobby for earmarks in FY 2006 and FY 2007 nor additional funding from the Department beginning in FY 2007. The interested members from the South Carolina and Georgia Congressional Delegations would need to give their assurances that seek to have the FY 2006 Hobson language struck from the House Energy and Water Development Appropriations bill (HEWD). They would also need to assure the Department that they would not seek Congressional earmarks in FY 2007.

Chairman Hobson inserted language in the HEWD Appropriations bill that requires SC to fund SREL at $5 million through the expiration of the current contract on June 30, 2006. This bill passed the full committee on May 18, 2005.

Agenda:	To present the Secretary with a plan to secure funding for SREL through FY 2007.	
Lead & Attending Staff:	Jill Sigal and Charlie Anderson	
Briefing Material:	[ ] None	[X] Attached
Open to Press:	[ ] Yes	[X] No

SAVANNAH RIVER ECOLOGY LABORATORY BACKGROUND

The Savannah River Ecology Laboratory (SREL) was established in 1951, after the Atomic Energy Commission acquired 310 square miles of land along the Savannah River to establish the Savannah River Site (SRS). SREL is operated through an agreement with the University of Georgia. SREL has a staff of about 180. Most are employees of the University of Georgia.

SREL is important to the Department of Energy in three areas: Ecological Risks and Effects, Environmental Characterization, and Remediation and Restoration. Departmental funding for SREL has been more than $8 million annually.

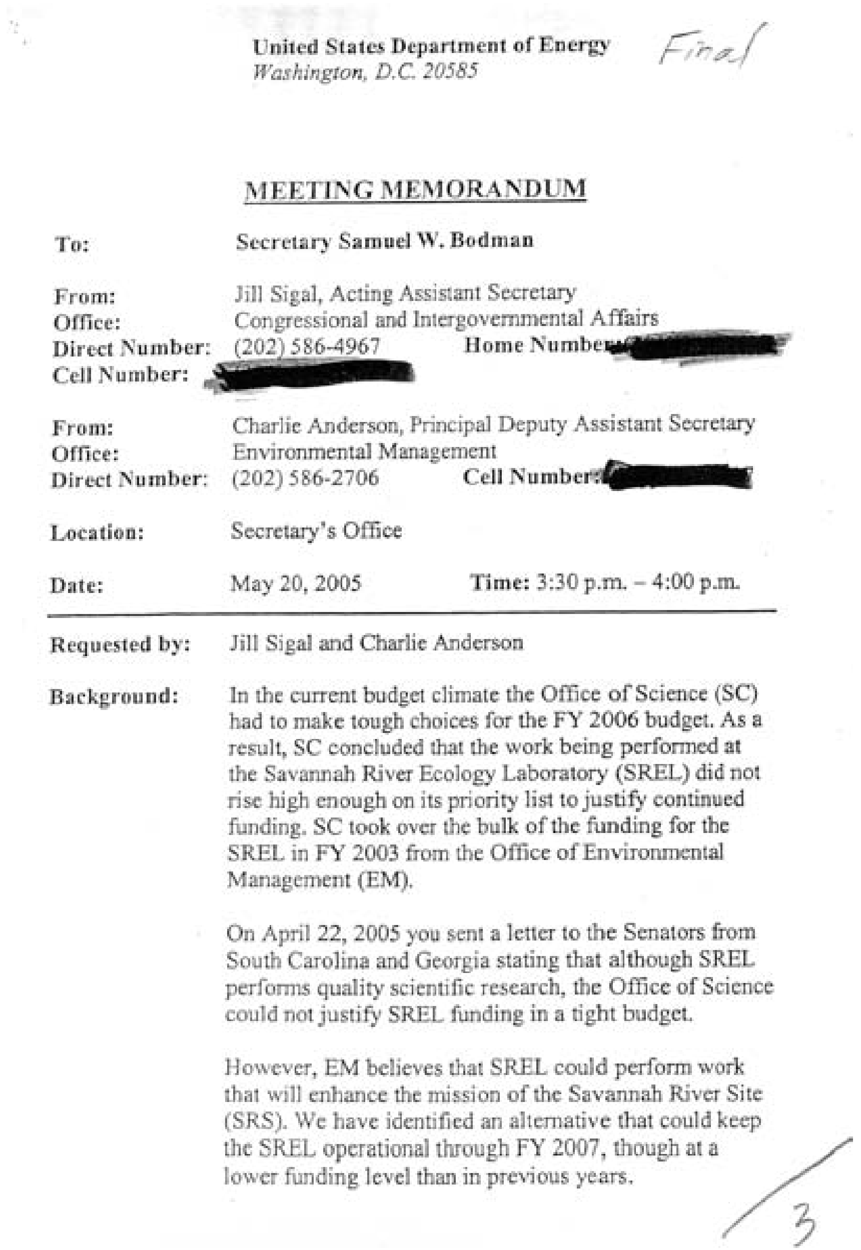
The primary mission of SREL is to provide an independent evaluation of the ecological effects of SRS operations through a program of ecological research, education, and outreach. This program involves both basic and applied environmental research, with emphasis upon expanding the understanding of ecological processes and principles, and evaluating impacts of land use activities on the environment.

This independent evaluation provides additional credibility to the Department of Energy's (DOE) processes for remediation to federal and state regulatory agencies, the general public, and other stakeholders.

1. Characterization – This is the important first step in determining environmental and health risks and devising remediation and restoration strategies. It has physical, chemical, and biological components and spans molecular to landscape scales. Scientific knowledge gaps exist that impair accurate risk assessment, limit remediation and restoration activities, and make cost-effective management decisions difficult.

2. Ecological Risks and Effects – This research attempts to reduce many of the knowledge gaps currently associated with ecological risk analyses and effects of contaminants. It studies metals contamination, environmental transport, chronic low-dose rate irradiation, biomarkers, and ecological risk analyses.

3. Remediation and Restoration – This multidisciplinary research area is designed to develop remediation and restoration techniques that are protective of both human as well as ecosystem health. It studies engineered remediation (reducing contaminant migration, bioavailability, or receptor exposure), biologically-based remediation (using biological processes to remediate contaminants), and restoration (revitalizing degraded ecosystems).



United States Department of Energy
Washington, D.C. 20585

Final

MEETING MEMORANDUM

To: **Secretary Samuel W. Bodman**

From: Jill Sigal, Acting Assistant Secretary
Office: Congressional and Intergovernmental Affairs
Direct Number: (202) 586-4967 **Home Number:** [redacted]
Cell Number: [redacted]

From: Charlie Anderson, Principal Deputy Assistant Secretary
Office: Environmental Management
Direct Number: (202) 586-2706 **Cell Number:** [redacted]

Location: Secretary's Office

Date: May 20, 2005 **Time:** 3:30 p.m. – 4:00 p.m.

Requested by: Jill Sigal and Charlie Anderson

Background: In the current budget climate the Office of Science (SC) had to make tough choices for the FY 2006 budget. As a result, SC concluded that the work being performed at the Savannah River Ecology Laboratory (SREL) did not rise high enough on its priority list to justify continued funding. SC took over the bulk of the funding for the SREL in FY 2003 from the Office of Environmental Management (EM).

On April 22, 2005 you sent a letter to the Senators from South Carolina and Georgia stating that although SREL performs quality scientific research, the Office of Science could not justify SREL funding in a tight budget.

However, EM believes that SREL could perform work that will enhance the mission of the Savannah River Site (SRS). We have identified an alternative that could keep the SREL operational through FY 2007, though at a lower funding level than in previous years.

/3

We propose the following alternative funding plan: EM would contribute $3 million to SREL from the SRS budget for FY 2006. In addition, the Office of Science would provide $1 million in FY 2006 and the National Nuclear Security Administration would provide approximately $500,000 in FY 2006.

Of the $3 million that EM would contribute, between $1 and $2 million would support infrastructure and maintenance. The remaining amount would support work tasked by EM, SC, and NNSA. It is important to note that under the current scenario the Department would need to spend between $1 - $2 million in FY 2006, to close the SREL.

In FY 2007, EM would fund SREL $1 million to continue operations in support of SRS. The extension would allow SREL time to seek funding for work in FY 2007 from DOE programs and non-DOE entities while completing its current work for the Department and continuing its independently funded research. It would also establish the mechanisms for possible SREL continuation beyond FY 2007.

EM, with federal resources, would also support the preparation and management of a new cooperative agreement needed for SREL to operate. The cooperative agreement is the contract like mechanism that allows SREL to enter into agreements with other universities and institutions, and to use the facilities at SRS. Supporting this agreement would only involve existing federal employees at SRS to administer the cooperative agreement; therefore there would be no measurable additional costs. The new cooperative agreement would start at the conclusion of the existing agreement, which expires on June 30, 2006, and would last 5 years.

We ask that you approve going forward if three conditions are met:

1) The University of Georgia (lab operator) must agree to the reduced level of funding and agree to not seek congressional earmarks in FY 2006 and FY 2007 beyond.

2) The members from the South Carolina and Georgia Congressional Delegations would need to give their assurance that they would seek to have the language struck from the House Energy and Water Development Appropriations bill (HEWD) that adds $5 million to the SC budget for SREL through the expiration of the current contract on June 30, 2006.

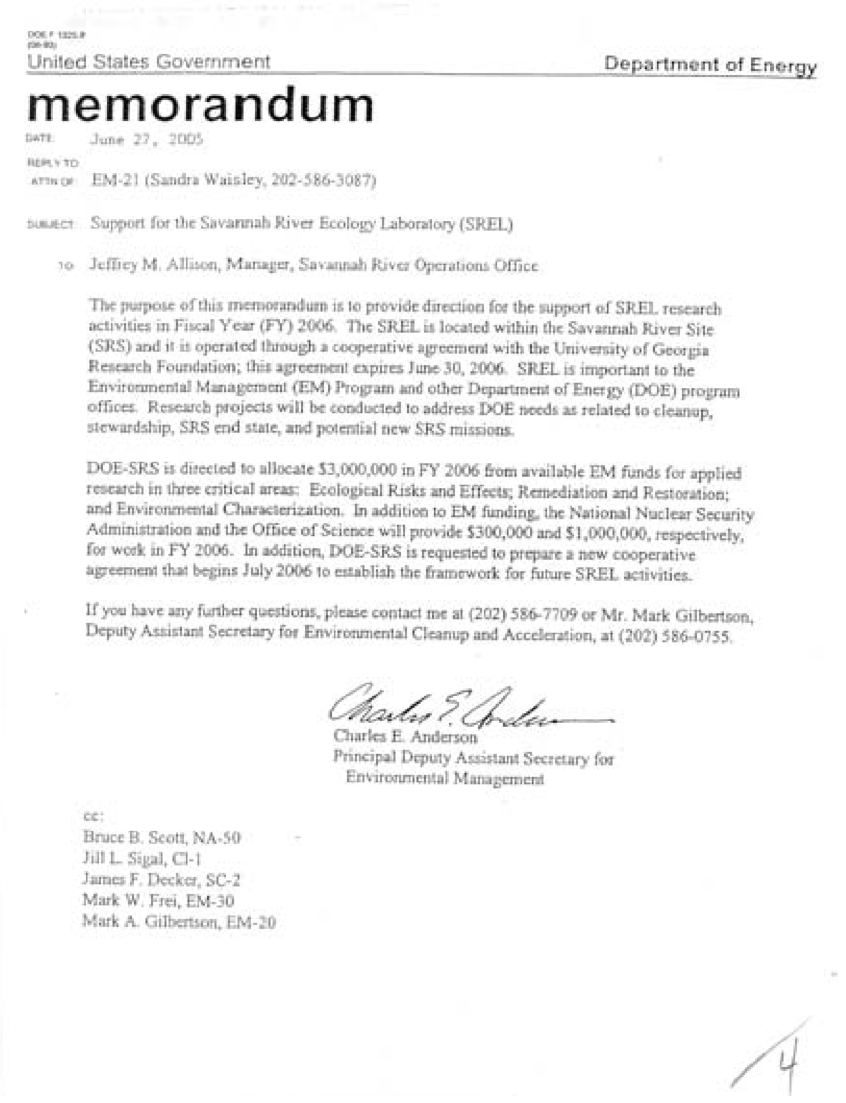
3) The Congressional delegation would need to assure the Department that they would not seek Congressional earmarks in FY 2006 and FY 2007 for SREL

Agenda: To present the Secretary with a plan to secure funding for SREL through FY 2007.

Lead & Attending Staff: Jill Sigal and Charlie Anderson

Briefing Material: [ ] None [X] Attached

Open to Press: [ ] Yes [X] No



United States Government Department of Energy

memorandum

DATE: June 27, 2005

REPLY TO ATTN OF: EM-21 (Sandra Waisley, 202-586-3087)

SUBJECT: Support for the Savannah River Ecology Laboratory (SREL)

TO: Jeffrey M. Allison, Manager, Savannah River Operations Office

The purpose of this memorandum is to provide direction for the support of SREL research activities in Fiscal Year (FY) 2006. The SREL is located within the Savannah River Site (SRS) and it is operated through a cooperative agreement with the University of Georgia Research Foundation; this agreement expires June 30, 2006. SREL is important to the Environmental Management (EM) Program and other Department of Energy (DOE) program offices. Research projects will be conducted to address DOE needs as related to cleanup, stewardship, SRS end state, and potential new SRS missions.

DOE-SRS is directed to allocate $3,000,000 in FY 2006 from available EM funds for applied research in three critical areas: Ecological Risks and Effects; Remediation and Restoration; and Environmental Characterization. In addition to EM funding, the National Nuclear Security Administration and the Office of Science will provide $300,000 and $1,000,000, respectively, for work in FY 2006. In addition, DOE-SRS is requested to prepare a new cooperative agreement that begins July 2006 to establish the framework for future SREL activities.

If you have any further questions, please contact me at (202) 586-7709 or Mr. Mark Gilbertson, Deputy Assistant Secretary for Environmental Cleanup and Acceleration, at (202) 586-0755.

Charles E. Anderson
Principal Deputy Assistant Secretary for
Environmental Management

cc:
Bruce B. Scott, NA-50
Jill L. Sigal, CI-1
James F. Decker, SC-2
Mark W. Frei, EM-30
Mark A. Gilbertson, EM-20

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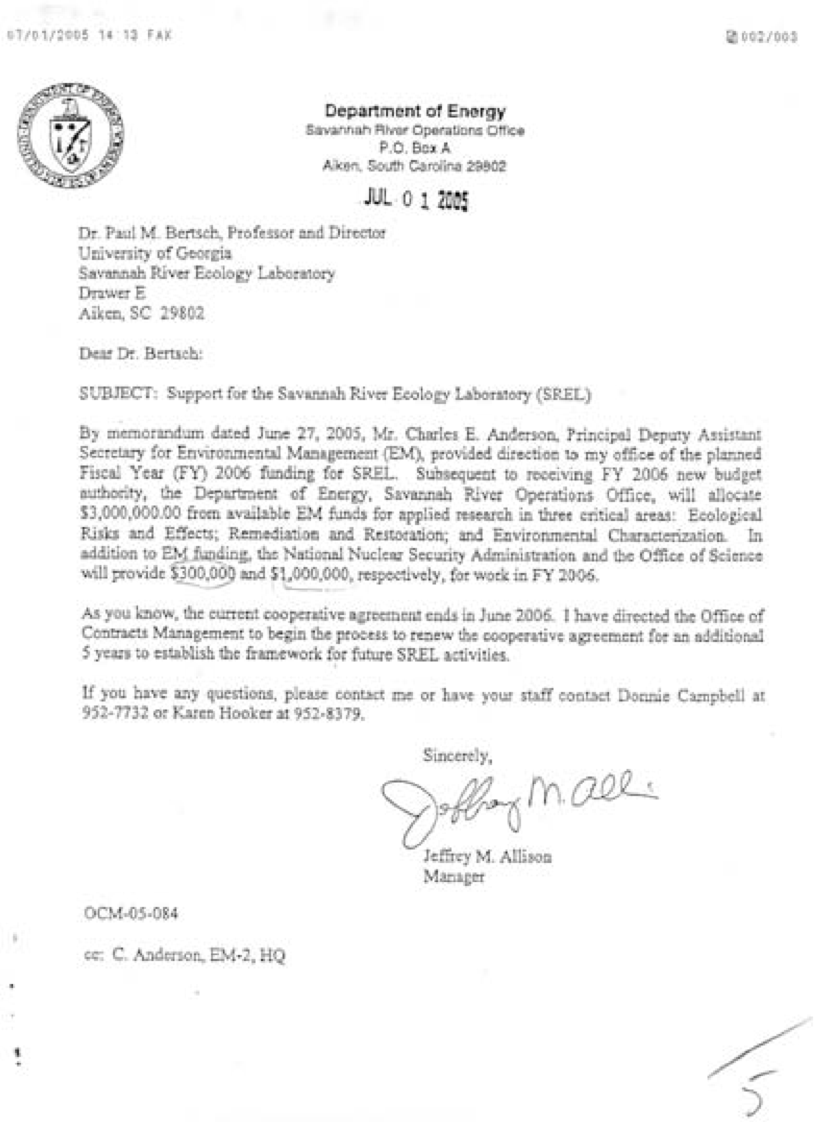

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Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

JUL 0 1 2005

Dr. Paul M. Bertsch, Professor and Director
University of Georgia
Savannah River Ecology Laboratory
Drawer E
Aiken, SC 29802

Dear Dr. Bertsch:

SUBJECT: Support for the Savannah River Ecology Laboratory (SREL)

By memorandum dated June 27, 2005, Mr. Charles E. Anderson, Principal Deputy Assistant Secretary for Environmental Management (EM), provided direction to my office of the planned Fiscal Year (FY) 2006 funding for SREL. Subsequent to receiving FY 2006 new budget authority, the Department of Energy, Savannah River Operations Office, will allocate $3,000,000.00 from available EM funds for applied research in three critical areas: Ecological Risks and Effects; Remediation and Restoration; and Environmental Characterization. In addition to EM funding, the National Nuclear Security Administration and the Office of Science will provide $300,000 and $1,000,000, respectively, for work in FY 2006.

As you know, the current cooperative agreement ends in June 2006. I have directed the Office of Contracts Management to begin the process to renew the cooperative agreement for an additional 5 years to establish the framework for future SREL activities.

If you have any questions, please contact me or have your staff contact Donnie Campbell at 952-7732 or Karen Hooker at 952-8379.

Sincerely,

Jeffrey M. Allison
Manager

OCM-05-084

cc: C. Anderson, EM-2, HQ

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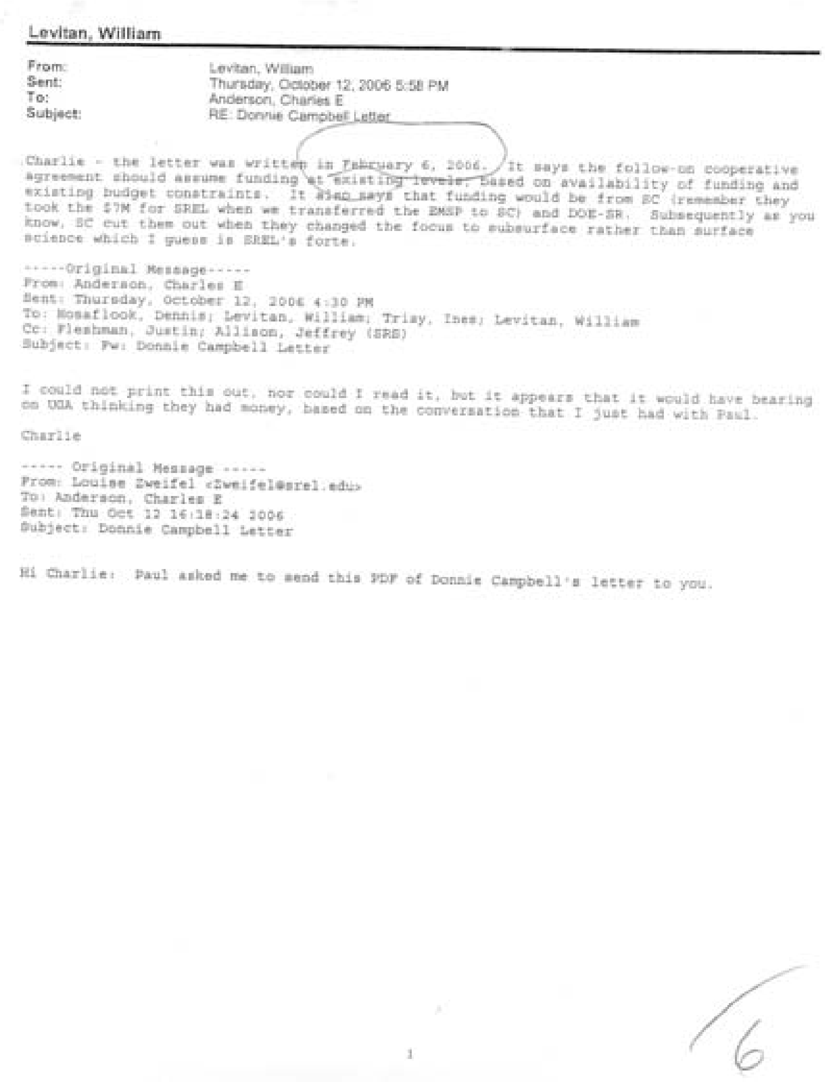

Levitan, William

From: Levitan, William
Sent: Thursday, October 12, 2006 5:58 PM
To: Anderson, Charles E
Subject: RE: Donnie Campbell Letter

Charlie - the letter was written in February 6, 2006. It says the follow-on cooperative agreement should assume funding at existing levels, based on availability of funding and existing budget constraints. It also says that funding would be from SC (remember they took the $7M for SREL when we transferred the EMSP to SC) and DOE-SR. Subsequently as you know, SC cut them out when they changed the focus to subsurface rather than surface science which I guess is SREL's forte.

-----Original Message-----
From: Anderson, Charles E
Sent: Thursday, October 12, 2006 4:30 PM
To: Mosaflook, Dennis; Levitan, William; Trisy, Ines; Levitan, William
Cc: Fleshman, Justin; Allison, Jeffrey (SRS)
Subject: Fw: Donnie Campbell Letter

I could not print this out, nor could I read it, but it appears that it would have bearing on UGA thinking they had money, based on the conversation that I just had with Paul.

Charlie

----- Original Message -----
From: Louise Zweifel <Zweifel@srel.edu>
To: Anderson, Charles E
Sent: Thu Oct 12 16:18:24 2006
Subject: Donnie Campbell Letter

Hi Charlie: Paul asked me to send this PDF of Donnie Campbell's letter to you.

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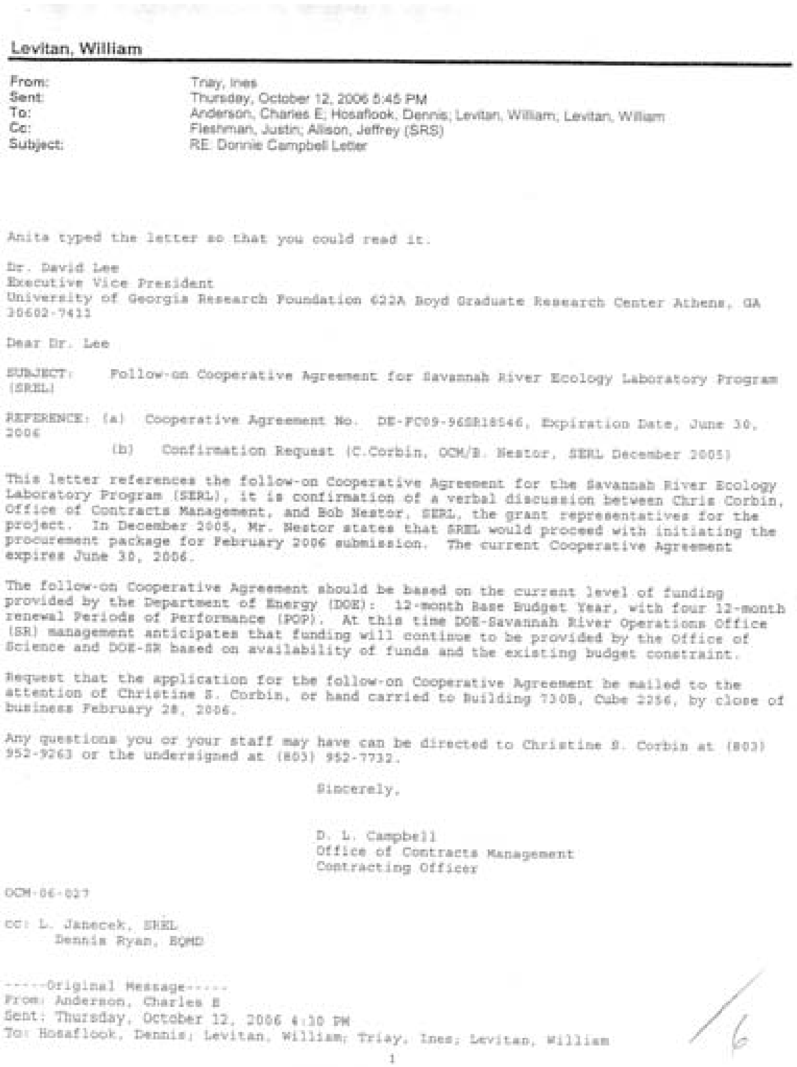

Levitan, William

From: Triay, Ines
Sent: Thursday, October 12, 2006 5:45 PM
To: Anderson, Charles E; Hosaflook, Dennis; Levitan, William; Levitan, William
Cc: Fleshman, Justin; Allison, Jeffrey (SRS)
Subject: RE: Donnie Campbell Letter

Anita typed the letter so that you could read it.

Dr. David Lee
Executive Vice President
University of Georgia Research Foundation 622A Boyd Graduate Research Center Athens, GA 30602-7411

Dear Dr. Lee

SUBJECT: Follow-on Cooperative Agreement for Savannah River Ecology Laboratory Program (SREL)

REFERENCE: (a) Cooperative Agreement No. DE-FC09-96SR18546, Expiration Date, June 30, 2006
(b) Confirmation Request (C.Corbin, OCM/B. Nestor, SERL December 2005)

This letter references the follow-on Cooperative Agreement for the Savannah River Ecology Laboratory Program (SERL), it is confirmation of a verbal discussion between Chris Corbin, Office of Contracts Management, and Bob Nestor, SERL, the grant representatives for the project. In December 2005, Mr. Nestor states that SREL would proceed with initiating the procurement package for February 2006 submission. The current Cooperative Agreement expires June 30, 2006.

The follow-on Cooperative Agreement should be based on the current level of funding provided by the Department of Energy (DOE): 12-month Base Budget Year, with four 12-month renewal Periods of Performance (POP). At this time DOE-Savannah River Operations Office (SR) management anticipates that funding will continoe to be provided by the Office of Science and DOE-SR based on availability of funds and the existing budget constraint.

Request that the application for the follow-on Cooperative Agreement be mailed to the attention of Christine S. Corbin, or hand carried to Building 730B, Cube 2256, by close of business February 28, 2006.

Any questions you or your staff may have can be directed to Christine S. Corbin at (803) 952-9263 or the undersigned at (803) 952-7732.

Sincerely,

D. L. Campbell
Office of Contracts Management
Contracting Officer

OCM-06-027

cc: L. Janecek, SREL
Dennis Ryan, EQMD

-----Original Message-----
From: Anderson, Charles E
Sent: Thursday, October 12, 2006 4:30 PM
To: Hosaflook, Dennis; Levitan, William; Triay, Ines; Levitan, William

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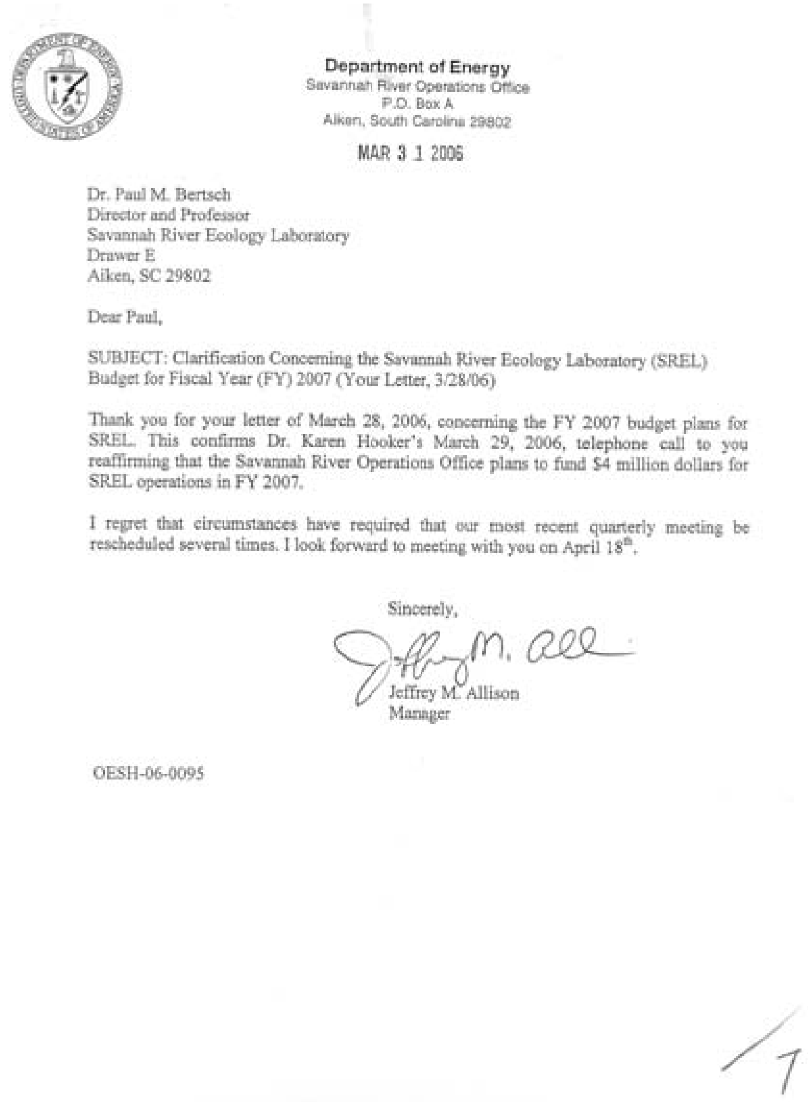

Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

MAR 3 1 2006

Dr. Paul M. Bertsch
Director and Professor
Savannah River Ecology Laboratory
Drawer E
Aiken, SC 29802

Dear Paul,

SUBJECT: Clarification Concerning the Savannah River Ecology Laboratory (SREL) Budget for Fiscal Year (FY) 2007 (Your Letter, 3/28/06)

Thank you for your letter of March 28, 2006, concerning the FY 2007 budget plans for SREL. This confirms Dr. Karen Hooker's March 29, 2006, telephone call to you reaffirming that the Savannah River Operations Office plans to fund $4 million dollars for SREL operations in FY 2007.

I regret that circumstances have required that our most recent quarterly meeting be rescheduled several times. I look forward to meeting with you on April 18th.

Sincerely,

Jeffrey M. Allison
Manager

OESH-06-0095

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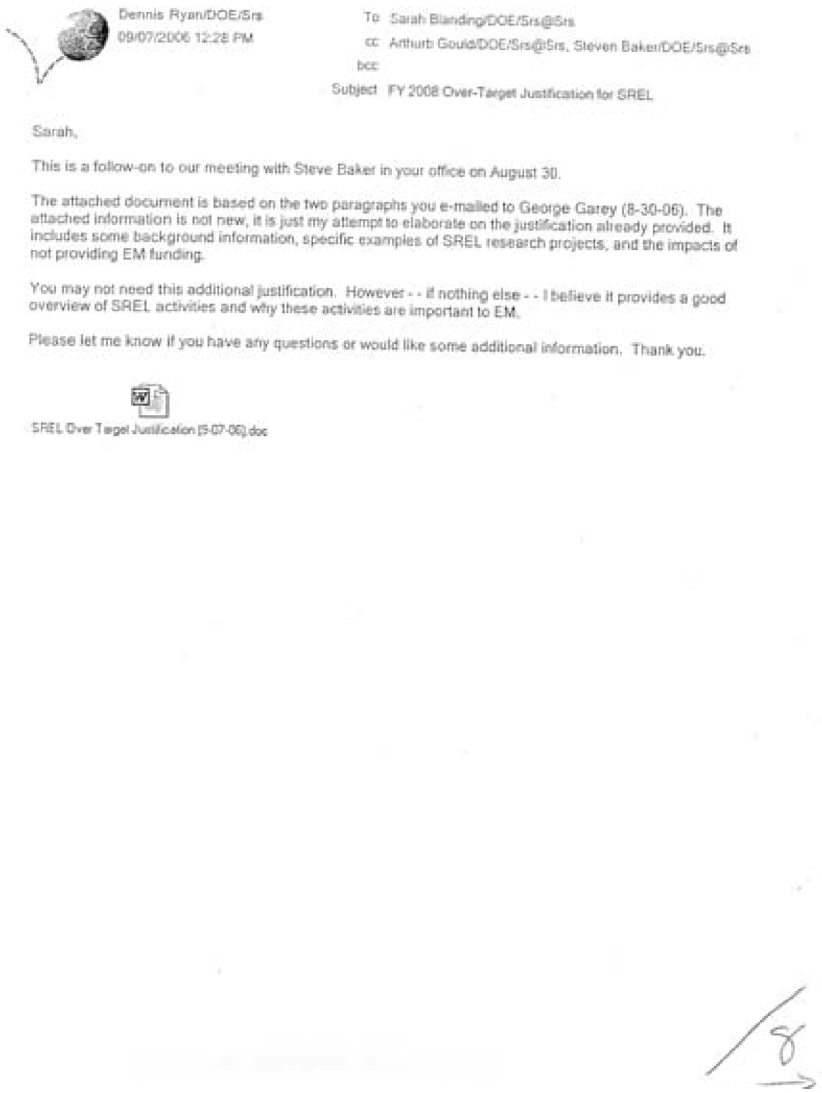

Dennis Ryan/DOE/Srs
09/07/2006 12:28 PM

To Sarah Blanding/DOE/Srs@Srs
cc Arthurb Gould/DOE/Srs@Srs, Steven Baker/DOE/Srs@Srs
bcc
Subject FY 2008 Over-Target Justification for SREL

Sarah,

This is a follow-on to our meeting with Steve Baker in your office on August 30.

The attached document is based on the two paragraphs you e-mailed to George Garey (8-30-06). The attached information is not new, it is just my attempt to elaborate on the justification already provided. It includes some background information, specific examples of SREL research projects, and the impacts of not providing EM funding.

You may not need this additional justification. However - - if nothing else - - I believe it provides a good overview of SREL activities and why these activities are important to EM.

Please let me know if you have any questions or would like some additional information. Thank you.

SREL Over Target Justification (9-07-06).doc

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"Over Target" Justification for OMB
Savannah River Ecology Laboratory
FY 2008

The four million dollars of over target in PBS100 has a direct impact on the DOE's ability to fund the Savannah River Environmental Laboratory (SREL) program. The SREL is an important component of the EM cleanup strategy at the Savannah River Site (SRS).

The Savannah River Ecology Laboratory (SREL) provides an independent evaluation of the ecological effects of Savannah River Site (SRS) operations through a program of ecological research, education and outreach. This involves both basic and applied research, with emphasis on areas of critical concern for the Office of Environmental Management (EM), including environmental characterization, ecological risks and effects, and remediation and restoration. The SREL also supports ongoing planning and regulatory efforts for SRS projects through the continued development and maintenance of extensive ecological data bases and the management of the SRS National Environmental Research Park. Finally, SREL also helps DOE to effectively discuss environmental issues and information with other SRS organizations, regulators, DOE decision-makers, and stakeholders.

If the resources are not provided to support this important program, SREL will be closed. The following is a brief description of the immediate impacts that would result from closing SREL.

- SREL maintains important ecological databases that are used for regulatory compliance, including the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and Resource Conservation and Recovery Act (RCRA). The SRS Ecology Environmental Information Document (EEID) is the major site reference source for planning and regulatory project documents. Nearly 40% of the total publications cited in the EEID are from SREL. Moreover, SREL research accounts for over 75% of the peer-reviewed publications in the EEID. Without SREL: 1) existing SREL databases would be lost; 2) data interpretation by subject-matter experts would not be available; 3) existing databases would soon become out-dated; and 4) fewer new data bases would be developed.

- SREL supports ongoing regulatory compliance activities at the Mixed Waste Management Facility. SREL developed and is operating an automated vadose zone monitoring system to measure soil moisture and soil matric potential. Without SREL this expertise would lost.

- SREL helps DOE manage the SRS National Environmental Research Park (NERP) by hosting off-site scientists conducting research at SRS and by managing the 30 DOE Research Set-Aside areas at SRS. These 30 areas contain over 14,000 acres and provide an environmental baseline for the many different habitat types found at SRS. Baseline information is used in planning and regulatory documents to help predict impacts of ongoing, modified, or new SRS projects. Organisms collected from set-aside areas have been used to test methods of evaluating remediation and restoration actions as well as the development of terrestrial bio-assessment protocols. Without SREL, this expertise would have to be obtained from an off-site source.

- SREL conducts an integrated environmental outreach program for DOE. This program includes talks with schools and community groups, field trips and tours of SREL facilities, exhibits at community events, and workshops for area educators. At the request of DOE, SREL also makes presentations to the SRS Citizens Advisory Board, regulatory agency personnel, and other stakeholder groups. Topics include amphibian and reptile population declines, distribution and abundance of sensitive species, monitored natural attenuation, and ecological effects of radiological and chemical contamination. Without SREL, this opportunity to inform stakeholders on the ecological impacts of site operations would be lost.

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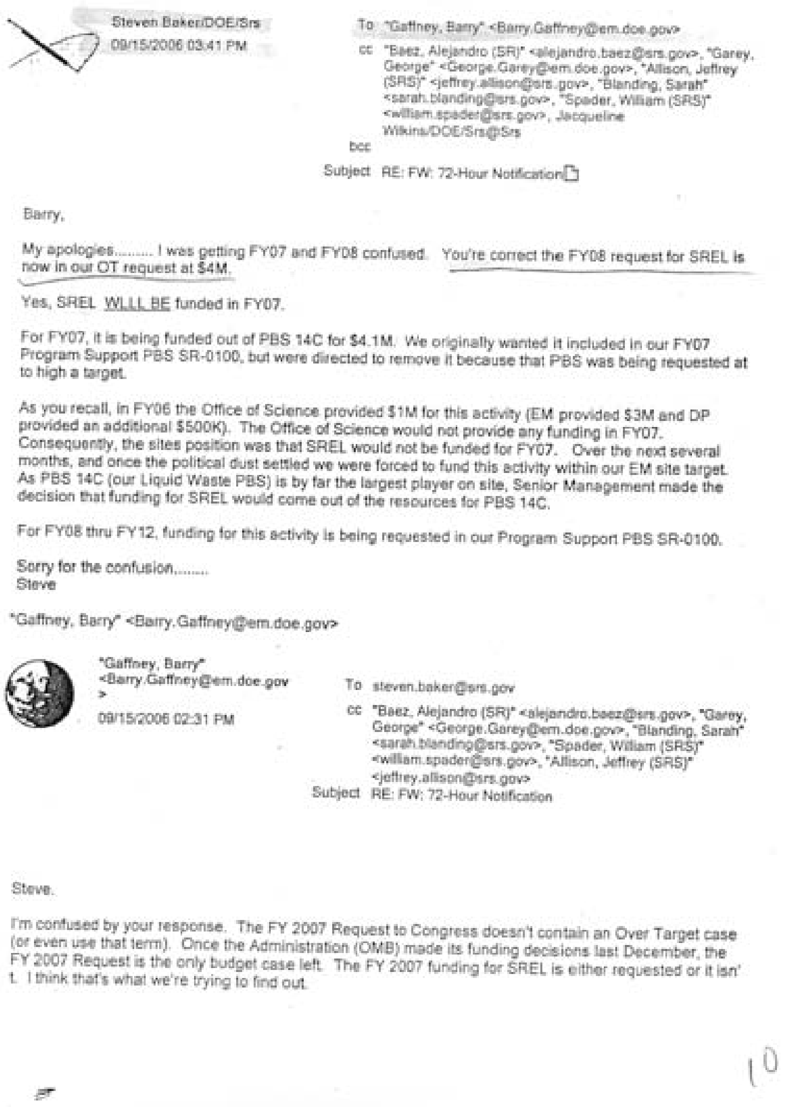
- SREL conducts research that can improve the effectiveness of existing environmental cleanup strategies at SRS and other sites. SREL is currently conducting over 35 major research projects. This includes research to identify and document alternative cleanup strategies that rely more heavily on natural systems than engineering approaches as well as monitored natural attenuation. SREL research is focused on three major areas.
    - Environmental Characterization – This is the important first step in determining environmental and health risks and devising remediation and restoration strategies. It has physical, chemical, and biological components and spans molecular to landscape scales. Scientific knowledge gaps exist that impair accurate risk assessment, limit remediation and restoration activities, and make cost-effective management decisions difficult or impossible. For example, SREL is conducting a long-term study of hydrologic conditions and vegetation responses in reference Carolina bay wetlands as a baseline for assessing wetland restoration success. Additional research is determining the chemical speciation of uranium and nickel in sediments and water of the Steed Pond-Tims Branch corridor.
    - Ecological Risks and Effects – This research area attempts to reduce many of the knowledge gaps currently associated with ecological risk analyses and the effects that contaminants have on biota. It studies metal contamination, environmental transport, chronic low dose-rate irradiation, biomarkers, and ecological risk analyses. Research results are intended to assist EM in making better-informed decisions about remediation and land management. For example, controlled experiments are being conducted using low dose-rate irradiation to determine the genetic response and frequency of mutations in a model fish species. Other research on mixed wastes is determining the influence of nickel and uranium on trichloroethylene (TCE) degradation by TCE-degrading bacteria.
    - Remediation and Restoration – This multidisciplinary research area is designed to develop remediation and restoration techniques that are protective of both human as well as ecosystem health. It studies engineered remediation (reducing contaminant migration, bioavailability, or receptor exposure), biologically-based remediation (using biological processes to remediate contaminants), and restoration (revitalizing degraded ecosystems). The goal is to help EM develop, evaluate, and achieve stakeholder acceptance of remediation and restoration projects. For example, SREL is conducting field studies to demonstrate the potential for using tree species (poplar, sweet gum, sycamore, loblolly pine, Leyland cypress) for remediation and restoration purposes on the SRS. SREL is also determining the effects of environmental conditions on rooting depth of native grasses used on closure caps for waste sites.

  Without SREL, this EM-funded research would be terminated.

- SREL also conducts ecological research for other DOE organizations, federal, state and local agencies, scientific organizations, and private sector companies. These include the National Nuclear Security Administration, DOE Office of Science, Department of Defense, Environmental Protection Agency, South Carolina Department of Natural Resources, and the National Science Foundation. Research conducted for these organizations builds on existing SREL research capabilities, helps support SREL operations, and often has application to ongoing SREL research. However, EM funding provides the base support for SREL. The loss of EM funding would require SREL to close. Without SREL, these research projects could not continue.

- Approximately 100 employees would be terminated. This would include senior research faculty, researchers, technicians, and maintenance and administrative personnel.

DPR
9-07-06



Steven Baker/DOE/Srs
09/15/2006 03:41 PM

To "Gaffney, Barry" <Barry.Gaffney@em.doe.gov>
cc "Baez, Alejandro (SR)" <alejandro.baez@srs.gov>, "Garey, George" <George.Garey@em.doe.gov>, "Allison, Jeffrey (SRS)" <jeffrey.allison@srs.gov>, "Blanding, Sarah" <sarah.blanding@srs.gov>, "Spader, William (SRS)" <william.spader@srs.gov>, Jacqueline Wilkins/DOE/Srs@Srs
bcc
Subject RE: FW: 72-Hour Notification

Barry,

My apologies......... I was getting FY07 and FY08 confused. You're correct the FY08 request for SREL is now in our OT request at $4M.

Yes, SREL WLLL BE funded in FY07.

For FY07, it is being funded out of PBS 14C for $4.1M. We originally wanted it included in our FY07 Program Support PBS SR-0100, but were directed to remove it because that PBS was being requested at to high a target.

As you recall, in FY06 the Office of Science provided $1M for this activity (EM provided $3M and DP provided an additional $500K). The Office of Science would not provide any funding in FY07. Consequently, the sites position was that SREL would not be funded for FY07. Over the next several months, and once the political dust settled we were forced to fund this activity within our EM site target. As PBS 14C (our Liquid Waste PBS) is by far the largest player on site, Senior Management made the decision that funding for SREL would come out of the resources for PBS 14C.

For FY08 thru FY12, funding for this activity is being requested in our Program Support PBS SR-0100.

Sorry for the confusion........
Steve

"Gaffney, Barry" <Barry.Gaffney@em.doe.gov>

"Gaffney, Barry" <Barry.Gaffney@em.doe.gov>
09/15/2006 02:31 PM

To steven.baker@srs.gov
cc "Baez, Alejandro (SR)" <alejandro.baez@srs.gov>, "Garey, George" <George.Garey@em.doe.gov>, "Blanding, Sarah" <sarah.blanding@srs.gov>, "Spader, William (SRS)" <william.spader@srs.gov>, "Allison, Jeffrey (SRS)" <jeffrey.allison@srs.gov>
Subject RE: FW: 72-Hour Notification

Steve,

I'm confused by your response. The FY 2007 Request to Congress doesn't contain an Over Target case (or even use that term). Once the Administration (OMB) made its funding decisions last December, the FY 2007 Request is the only budget case left. The FY 2007 funding for SREL is either requested or it isn't. I think that's what we're trying to find out.

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C Corbin/DOE/Srs
09/26/2006 09:33 AM

To Karen Poore/DOE/Srs@Srs, Craig Armstrong/DOE/Srs@Srs, DonnieD4 Campbell/DOE/Srs@Srs
cc Arthurb Gould/DOE/Srs@Srs, Dennis Ryan/DOE/Srs@Srs
bcc
Subject Fw: Savannah River Ecology Laboratory

Please advise of the path forward for the follow-on Cooperative Agreement for with UGARF for the SREL Program? Where are we with the issues cited below:

Charlie Anderson

(1) EM 2 problem with the Project Scope
(2) EM 22 problem with funding 1.5M verse 4M

Mark Gilbertson

(3) 72-Hours Congressional Notification (if awarded by September 30, 2006)

Time is very important with the Fiscal Year ending and pressure to have all open PRs obligated, I need to know how to proceed. If we do not meet the September 30, 2006 deadline, I need to allocate the non-DOE funding to the existing Cooperative Agreement and extend the Period of Performance until we are clear on the path forward. Please advise on path forward.

----- Forwarded by C Corbin/DOE/Srs on 09/26/2006 09:19 AM -----

Karen Poore/DOE/Srs
09/22/2006 09:47 AM

To Rebecca Craft/DOE/Srs@srs, C Corbin/DOE/Srs@Srs
cc
Subject Fw: Savannah River Ecology Laboratory

Still working - FYI.

----- Forwarded by Karen Poore/DOE/Srs on 09/22/2006 09:47 AM -----

Jeffrey Allison/DOE/Srs
09/22/2006 09:20 AM

To mark.gilbertson@em.doe.gov
cc William.spader@srs.gov, Arthurb Gould/DOE/Srs@Srs, Karen.Poore@srs.gov, "Dennis Ryan" <dennis.ryan@srs.gov>
Subject Fw: Savannah River Ecology Laboratory

Mark,

As a follow-up to our discussion on Monday, attached is a write-up providing a description of the work to be performed by SREL. Note that the cooperative agreement expires at the end of the month, so I need quick resolution on this issue. I am in transit from Idaho today, but feel free to call my cell phone (803-640-7392) and I'll catch you between stops. Thank you.

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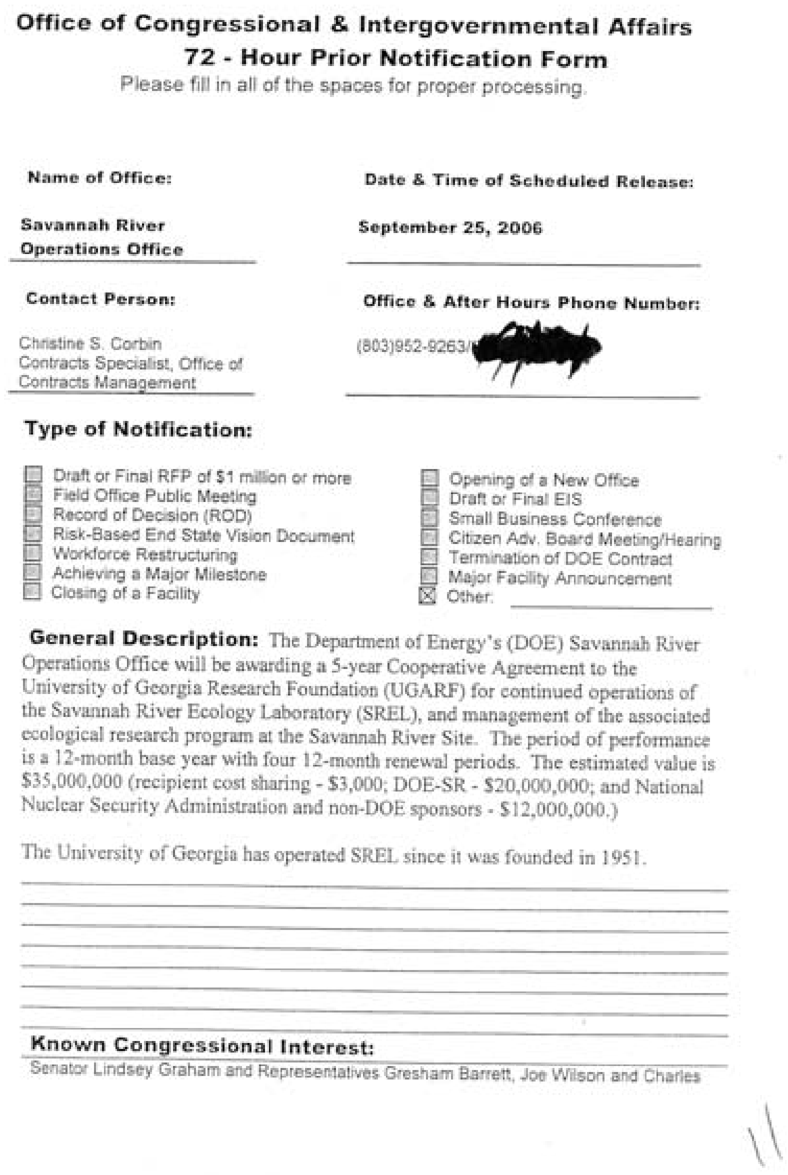


Office of Congressional & Intergovernmental Affairs
72 - Hour Prior Notification Form

Please fill in all of the spaces for proper processing.

Name of Office:

Savannah River
Operations Office

Date & Time of Scheduled Release:

September 25, 2006

Contact Person:

Christine S. Corbin
Contracts Specialist, Office of
Contracts Management

Office & After Hours Phone Number:

(803)952-9263/[redacted]

Type of Notification:

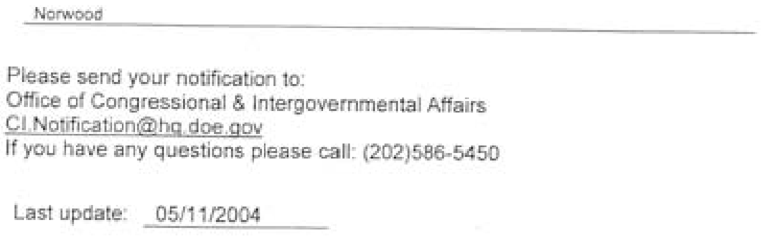
- ☐ Draft or Final RFP of $1 million or more
- ☐ Field Office Public Meeting
- ☐ Record of Decision (ROD)
- ☐ Risk-Based End State Vision Document
- ☐ Workforce Restructuring
- ☐ Achieving a Major Milestone
- ☐ Closing of a Facility
- ☐ Opening of a New Office
- ☐ Draft or Final EIS
- ☐ Small Business Conference
- ☐ Citizen Adv. Board Meeting/Hearing
- ☐ Termination of DOE Contract
- ☐ Major Facility Announcement
- ☒ Other: ____________

General Description: The Department of Energy's (DOE) Savannah River Operations Office will be awarding a 5-year Cooperative Agreement to the University of Georgia Research Foundation (UGARF) for continued operations of the Savannah River Ecology Laboratory (SREL), and management of the associated ecological research program at the Savannah River Site. The period of performance is a 12-month base year with four 12-month renewal periods. The estimated value is $35,000,000 (recipient cost sharing - $3,000; DOE-SR - $20,000,000; and National Nuclear Security Administration and non-DOE sponsors - $12,000,000.)

The University of Georgia has operated SREL since it was founded in 1951.

Known Congressional Interest:

Senator Lindsey Graham and Representatives Gresham Barrett, Joe Wilson and Charles



Norwood

Please send your notification to:
Office of Congressional & Intergovernmental Affairs
CI.Notification@hq.doe.gov
If you have any questions please call: (202)586-5450

Last update: 05/11/2004

9/20/06

Savannah River Ecology Laboratory

Scope of Work for FY2007-FY2011

The Savannah River Ecology Laboratory (SREL) provides an independent evaluation of the ecological effects of Savannah River Site (SRS) operations through a program of ecological research, education and outreach. This involves both basic and applied research, with emphasis on areas of critical concern for the Office of Environmental Management (EM), including environmental characterization, ecological risks and effects, and remediation and restoration. The SREL also supports ongoing planning and regulatory efforts for SRS projects through the continued development and maintenance of extensive ecological data bases and the management of the SRS National Environmental Research Park. Finally, SREL also helps DOE to effectively discuss environmental issues and information with other SRS organizations, regulators, DOE decision-makers, and stakeholders.

SREL's annual $4 million budget from EM, with projected annual adjustments for inflation, will be used for salaries, fringe benefits, supplies, travel and indirect costs as estimated below.

Category	Amount ($K)
Salaries	$2,385
Fringe Benefits	555
Expenses and Travel	500
Equipment	100
Indirect Costs (@11.5%)	460
TOTAL	$4,000

When summarized by tasks, the annual budget will be allocated as estimated below.

Task	Amount ($K)
Operational Support*	$1,500
Research Programs	2,185
Education	140
Outreach	175
TOTAL	$4,000

*Includes management and administrative support, infrastructure and facility maintenance, custodial services, safety services, and computer services.

Additional annual funding is received from NNSA ($500K), The University of Georgia (about $1 million), and external grants (about $2 million). DOE-SR provides utilities at no cost and services valued annually at about $150K for telephones, fire protection and radiological support.

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Following is a summary of projected tasks under the new cooperative agreement. SREL's research programs are dynamic and have been developed either in response to requests from DOE, through SREL's own initiative, or some combination of these approaches. Current and proposed activities deal with problems associated with the characterization, risks and effects, and remediation of groundwater and soil contamination on the SRS, as well as others related to long-term stewardship and the recently-completed End State Vision for the SRS. The identified tasks are multi-year efforts (FY2007-FY2011), but individual subtasks will be revised annually based on results from the previous year and projected future requirements. Estimated costs for each task are provided; they are expected to be reasonably similar from year to year.

Environmental Characterization

Characterization is a necessary first step in determining environmental and health risks and in devising appropriate remediation and restoration strategies. Environmental characterization information is also needed to make informed decisions about remediation approaches, long-term stewardship and land management, and it is also a critical component of NEPA reports, Records of Decision (ROD), and other regulatory documents. Environmental characterization is more than simply measuring contaminant concentrations in groundwater, soil, biota or other media, or reporting the presence of organisms at various locations. It includes developing an understanding of the processes that control distributions of contaminants, chemical forms, and their bioavailability. Characterization is also necessary to construct models of how natural and engineered systems function, both in the presence and absence of environmental contamination.

Task 1. Develop long-term ecological databases for use in Site documents and to determine whether any changes being observed are the result of natural fluctuations or operational impacts. ($315K/year)

Field studies will take place throughout the general Site and mostly involve continuation of ongoing work. For example, sampling and monitoring of all amphibian and reptile species will continue at Rainbow Bay, site of the world's longest continuous herpetological study, which was begun during construction of the Defense Waste Processing Facility. Data collection on hydrologic conditions and vegetation responses in more than 20 reference Carolina bays will continue as a baseline for assessing wetland restoration success. Two other ongoing efforts will involve extending a database on alligator genetics and population dynamics, and re-sampling threatened, endangered, and sensitive plant species to determine effects of land management activities. A newer effort will characterize microbial communities associated with sediment, water, and biofilms in contaminated and uncontaminated streams on the SRS as a component of SREL's bioremediation research and research related to developing novel long-term surveillance monitoring activities. Finally, a WSRC-funded subtask will continue to update a GIS database on SRS animal species used by SRS in ecological risk assessments.

Task 2. Determine the biogeochemical processes that control chemical speciation and mobility of toxic metals, organic contaminants, and radionuclides. ($400K/year)

Laboratory studies will be conducted along with field-based research at several locations on the SRS. Continuing research will characterize solid- and aqueous-phase uranium and nickel speciation in the Steed Pond-Tims Branch system, generating information that will be essential to developing potential *in situ* remediation solutions or information relative to natural attenuation through sequestration. In another study, the role of dissimilatory iron-reducing bacteria in determining the fate of chromium and uranium in SRS surface and vadose zone soils will be examined. Laboratory studies will continue to evaluate the impact of variably-saturated conditions on contaminant (uranium, chromium, and cesium) partitioning in the subsurface through application of Surface Complexation Models to describe contaminant migration in the vadose zone. Degradation of organic contaminants will be studied in the field to determine rates of natural attenuation of TCE and PCE at the interface of Pen Branch and the CMP groundwater plume, i.e., the hyporheic zone. Compound-specific isotope ratio analysis will be developed as a tool to evaluate the roles that indigenous microbial populations play in the cycling of carbon and nitrogen in terrestrial and aquatic environments affected by SRS activities.

Task 3. Assess whether sentinel species or other sensors can be used to characterize environmental health. ($275K/year)

A number of novel approaches are being examined to supplement or replace traditional methods of data collection. For example, in cooperation with WSRC and USFS-SR, an automated weather station and a remote wireless monitoring system are being installed for estimating evapo-transpiration potential at the Mixed Waste Management Facility (MWMF). The information will then be used to help determine application rates for the tritium irrigation system. Similarly, testing will continue of an automated vadose-zone monitoring and pore-water sampling system, also at MWMF, including comparing a remote wireless system in side-by-side trials with conventional field-based methods. Another novel approach includes evaluating the potential for using stable isotope signatures in freshwater mollusk shells as reliable monitors of water chemistry in surface waters of the SRS. On a larger scale, interactions among microbial diversity, ecosystem processes, and abiotic factors will be examined for their ability to predict effects of physical and chemical changes in the environment. In conjunction with a DoD-DOE-EPA-funded SERDP grant, a series of ecological indicators to be identified by DoD will be used to place SRS upland pine-hardwood forests on an index of regional land-use disturbance. Finally, with partial funding from the National Science Foundation, field research will continue on a study to characterize impacts of forest land-management practices on amphibian populations using the SRS as one of the study sites.

Ecological Risks and Effects

Estimated risks and effects determine the need for remediation and restoration efforts, while perceived risks and effects determine the public's acceptance and support of DOE policies and actions. Estimating ecological risks and effects on the basis of sound science helps to ensure that good management decisions are made by reducing uncertainties associated with complex environmental processes. A 1999 report from the National Academy of Sciences stated that *"Ecological risks are better characterized at the Savannah River Site than at any other DOE installation, due in part to the designation of the site as a National Environmental Research Park and the presence of the Savannah River Ecology Laboratory."*

Task 4. Determine how the form of a contaminant influences dose-response and toxicity relationships. ($300K/year)

Radionuclides and metals will be the focus of most of the research on this topic. Experiments will determine the dose-response relationships from acute and chronic sublethal doses of radiation on DNA mutations in red blood cells and reproductive cells in the model fish, medaka. In other studies, metal concentrations, metal distributions within organisms, and potential molecular damage resulting from exposure to nickel will be examined in earthworms, nematodes, and turtles—all organisms with the potential to bioaccumulate metals and transfer them to higher trophic levels. Portions of this work will be conducted at the National Synchrotron Light Source at Brookhaven National Laboratory. Finally, the stable isotope composition of nitrogen in amino acids of microorganisms and higher-level organisms will be analyzed to determine the source and fate of nitrogenous compounds, and how contaminants affect protein metabolism in these organisms.

Task 5. Determine the potential effects and interactions from exposure to mixed contaminants. ($300K/year)

Estimating ecological risks and effects from mixed contaminants (e.g., radionuclides and metals) is difficult and not generally attempted, even though mixed contaminants are commonly found in DOE waste sites. Several field and laboratory studies are underway to develop new methods and generate new knowledge in this area. Interactions between nickel and trichloroethylene (TCE) are being studied in the Tims Branch-Steed Pond system, including how nickel might affect plant enzymes involved in the metabolism of TCE, how TCE might affect the uptake of nickel in plants by changing cell membrane structure, and how the presence of TCE may affect soil chemistry and thus nickel bioavailability to plants. In a related study, assays will be completed to determine the influence of nickel and uranium on TCE degradation by TCE-degrading bacteria. A study involving radiation and metals will be done in collaboration with scientists at the Medical College of Georgia to examine radiation-induced molecular responses in fish embryos with and without exposure to cadmium. Finally, field and laboratory approaches will be used to determine the impacts of ash basin runoff on microbial communities associated with sediments, open water and biofilms in 400-D Area.

Task 6. Define more clearly the risks from low dose-rate, chronic exposures to radiation. ($170K/year)

With partial funding from DOE's Office of Science and in collaboration with scientists from Colorado State University, experiments will be conducted on the transgenerational effects of low-dose rate irradiation using medaka fish as a model to determine the genetic response and frequency of mutations in exposed and unexposed progeny of irradiated parents. Irradiation experiments will be done at SREL's Low Dose Irradiation Facility located at PAR Pond.

Remediation and Restoration

The knowledge and expertise based at SREL are ideally suited to address the remediation and restoration of large land areas contaminated with relatively low levels of metals, organics, and radionuclides. SREL conducts multidisciplinary research designed to assist in the development, evaluation and stakeholder acceptance of remediation and restoration efforts that protect human and ecosystem health. Fundamental to the success of various bioremediation, natural attenuation, and *in situ* remediation applications is an understanding of the underlying scientific principles on which they are based.

Task 7. Identify the traits of native species and populations that best determine their suitability for use in remediation and restoration. ($175K/year)

Two areas of emphasis for this research are phytoremediation of contaminated sites on the SRS, and the use of native vegetation in restoration of degraded habitats. Studies will evaluate the potential for using tree species, such as poplar, sweet gum and sycamore, for remediation and restoration. We will also conduct studies on the ability of native plants along Pen Branch to assimilate and degrade both TCE and PCE. New phytoremediation research will begin to evaluate different grasses for their ability to assimilate and degrade TCE.

In collaboration with the U.S. Forest Service-SR, life-history traits of native plant species most successful in restoration of drained Carolina bays will be evaluated. Finally, the survival and reproductive success of threatened, endangered, and sensitive plant species will be assessed in experimental restoration gardens under different land management practices with partial support from a DoD-DOE-EPA SERDP grant.

Task 8. Determine the primary mechanisms by which natural attenuation and engineered remediation processes immobilize contaminants, and identify the appropriate geochemical and biological endpoints to assess sustainability. ($250K/year)

Laboratory studies involving co-contaminants will be completed to evaluate the effectiveness of hydroxyl apatite amendments in reducing metal toxicity to microorganisms, which should then enhance TCE degradation by the microorganisms. This is part of an effort to understand the biogeochemical processes leading to natural attenuation of uranium, nickel and other co-contaminant metals in Steed Pond-Tims Branch, and cesium in contaminated SRS stream corridors. In an ongoing study being conducted in collaboration with WSRC, existing field-scale solute tracer data from H-Area subsurface injection experiments will be analyzed to determine relationships between travel distance and geologic formation heterogeneity on longitudinal dispersion of the tracer, which acts as a surrogate for contaminants.

Education

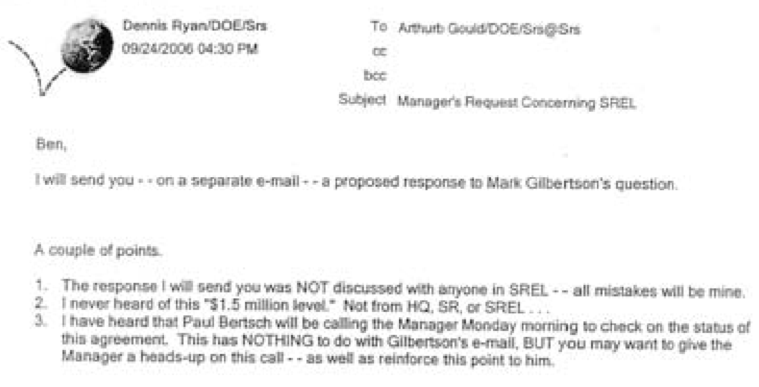
Task 9. Support the education of college undergraduates and graduate students as one of SREL's core activities. ($140K/year)

Since SREL's founding, education and training of students have been important components of SREL's program. Undergraduate and graduate students from around the world are provided an opportunity to conduct research on the SRS under the supervision of SREL scientists. Students are integrated into SREL's research programs and supported with funding from DOE and external grants. SREL's summer undergraduate program is largely supported by the National Science Foundation. SREL seeks to graduate at least five students each year with M.S. or Ph.D. degrees based on research conducted at SREL.

Outreach

Task 10. Maintain outreach and communication programs to enhance the public's understanding of environmental issues affecting the SRS. ($175K/year)

Outreach to the general public is an important component of SREL's cooperative agreement and complements the Lab's research efforts. Environmental outreach programs target a range of audiences and age groups in an effort to increase the general public's awareness and understanding of environmental issues affecting the SRS and surrounding region. SREL personnel conduct over 200 presentations per year and provide associated educational materials to K-12 students, teachers and the general public.



Dennis Ryan/DOE/Srs
09/24/2006 04:30 PM

To Arthurb Gould/DOE/Srs@Srs
cc
bcc
Subject Manager's Request Concerning SREL

Ben,

I will send you - - on a separate e-mail - - a proposed response to Mark Gilbertson's question.

A couple of points.

1. The response I will send you was NOT discussed with anyone in SREL - - all mistakes will be mine.
2. I never heard of this "$1.5 million level." Not from HQ, SR, or SREL . . .
3. I have heard that Paul Bertsch will be calling the Manager Monday morning to check on the status of this agreement. This has NOTHING to do with Gilbertson's e-mail, BUT you may want to give the Manager a heads-up on this call - - as well as reinforce this point to him.

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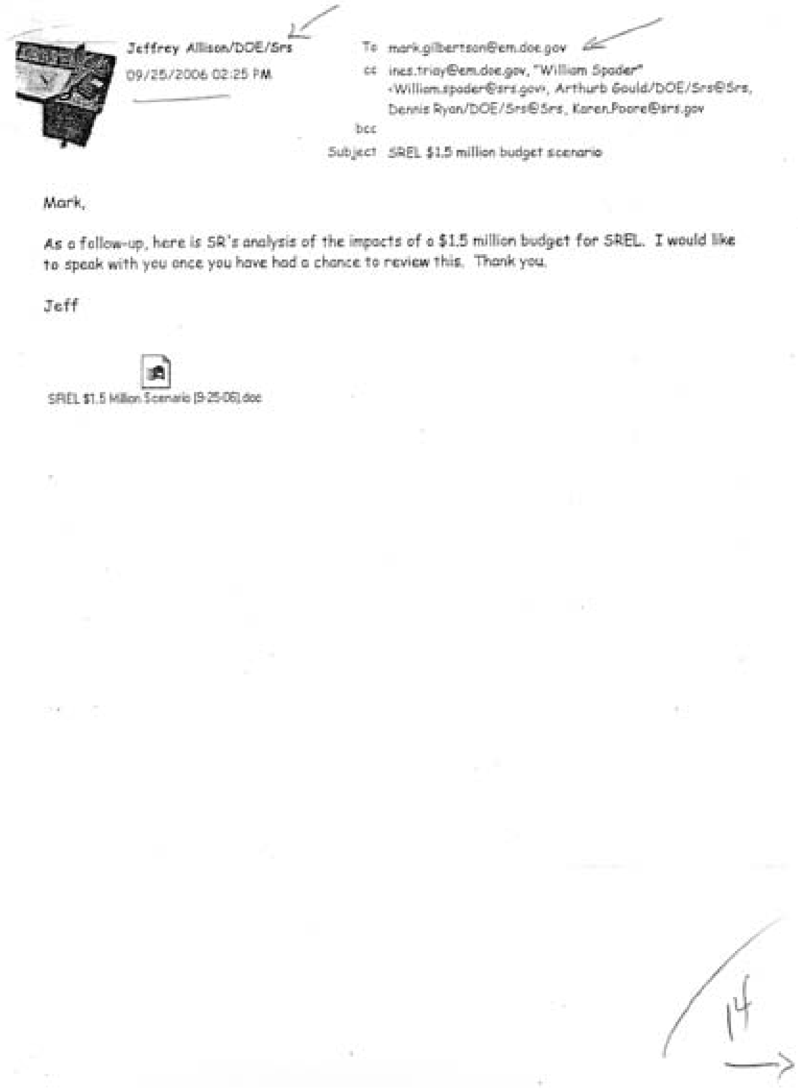

Jeffrey Allison/DOE/Srs
09/25/2006 02:25 PM

To mark.gilbertson@em.doe.gov
cc ines.triay@em.doe.gov, "William Spader" <William.spader@srs.gov>, Arthurb Gould/DOE/Srs@Srs, Dennis Ryan/DOE/Srs@Srs, Karen.Poore@srs.gov
bcc
Subject SREL $1.5 million budget scenario

Mark,

As a follow-up, here is SR's analysis of the impacts of a $1.5 million budget for SREL. I would like to speak with you once you have had a chance to review this. Thank you.

Jeff

SREL $1.5 Million Scenario (9-25-06).doc

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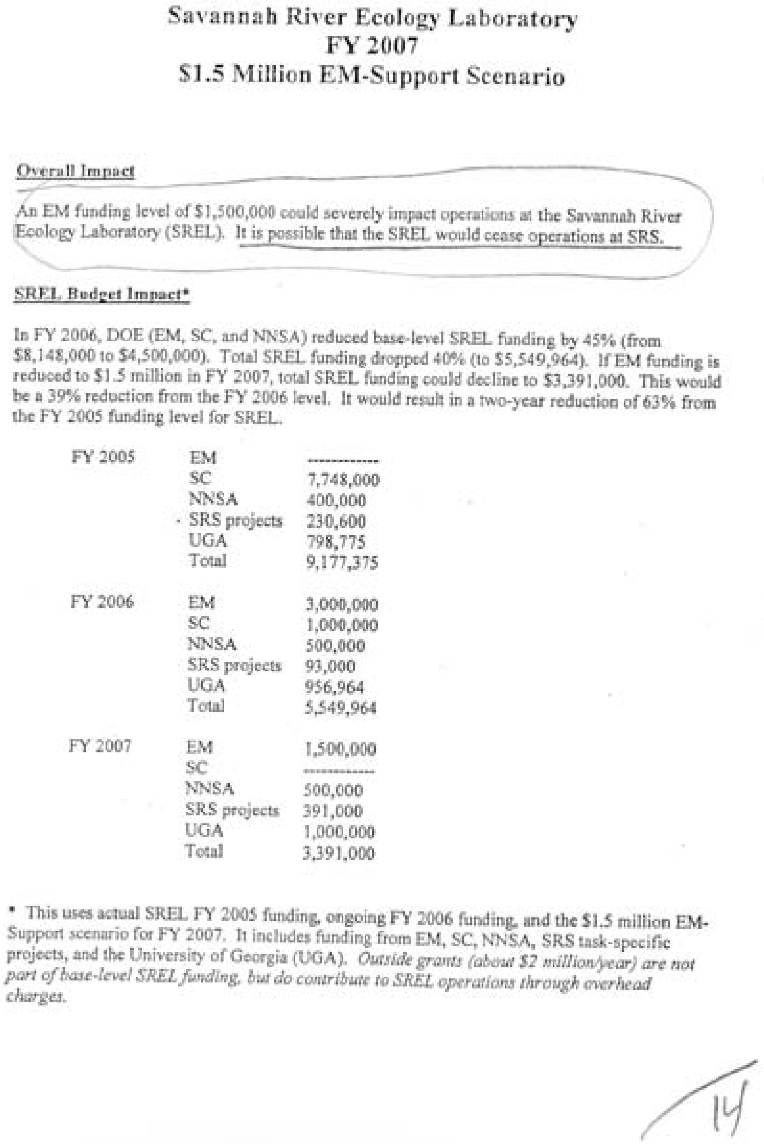


Savannah River Ecology Laboratory
FY 2007
$1.5 Million EM-Support Scenario

Overall Impact

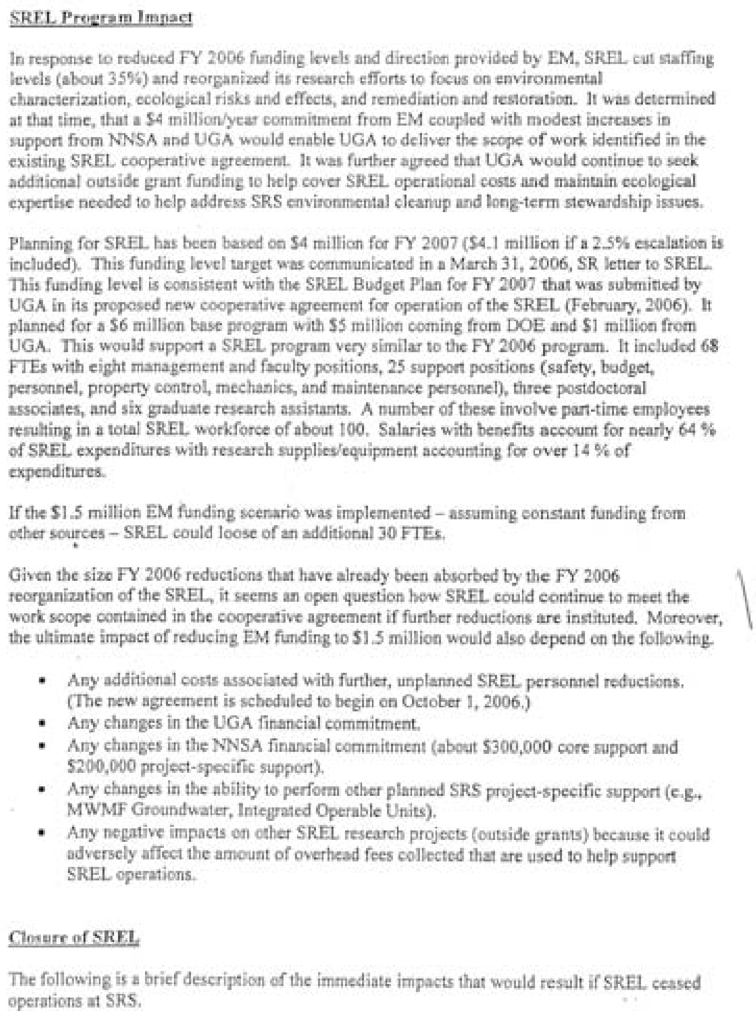
An EM funding level of $1,500,000 could severely impact operations at the Savannah River Ecology Laboratory (SREL). It is possible that the SREL would cease operations at SRS.

SREL Budget Impact*

In FY 2006, DOE (EM, SC, and NNSA) reduced base-level SREL funding by 45% (from $8,148,000 to $4,500,000). Total SREL funding dropped 40% (to $5,549,964). If EM funding is reduced to $1.5 million in FY 2007, total SREL funding could decline to $3,391,000. This would be a 39% reduction from the FY 2006 level. It would result in a two-year reduction of 63% from the FY 2005 funding level for SREL.

FY 2005	EM	------------
	SC	7,748,000
	NNSA	400,000
	SRS projects	230,600
	UGA	798,775
	Total	9,177,375
FY 2006	EM	3,000,000
	SC	1,000,000
	NNSA	500,000
	SRS projects	93,000
	UGA	956,964
	Total	5,549,964
FY 2007	EM	1,500,000
	SC	------------
	NNSA	500,000
	SRS projects	391,000
	UGA	1,000,000
	Total	3,391,000

* This uses actual SREL FY 2005 funding, ongoing FY 2006 funding, and the $1.5 million EM-Support scenario for FY 2007. It includes funding from EM, SC, NNSA, SRS task-specific projects, and the University of Georgia (UGA). *Outside grants (about $2 million/year) are not part of base-level SREL funding, but do contribute to SREL operations through overhead charges.*



SREL Program Impact

In response to reduced FY 2006 funding levels and direction provided by EM, SREL cut staffing levels (about 35%) and reorganized its research efforts to focus on environmental characterization, ecological risks and effects, and remediation and restoration. It was determined at that time, that a $4 million/year commitment from EM coupled with modest increases in support from NNSA and UGA would enable UGA to deliver the scope of work identified in the existing SREL cooperative agreement. It was further agreed that UGA would continue to seek additional outside grant funding to help cover SREL operational costs and maintain ecological expertise needed to help address SRS environmental cleanup and long-term stewardship issues.

Planning for SREL has been based on $4 million for FY 2007 ($4.1 million if a 2.5% escalation is included). This funding level target was communicated in a March 31, 2006, SR letter to SREL. This funding level is consistent with the SREL Budget Plan for FY 2007 that was submitted by UGA in its proposed new cooperative agreement for operation of the SREL (February, 2006). It planned for a $6 million base program with $5 million coming from DOE and $1 million from UGA. This would support a SREL program very similar to the FY 2006 program. It included 68 FTEs with eight management and faculty positions, 25 support positions (safety, budget, personnel, property control, mechanics, and maintenance personnel), three postdoctoral associates, and six graduate research assistants. A number of these involve part-time employees resulting in a total SREL workforce of about 100. Salaries with benefits account for nearly 64 % of SREL expenditures with research supplies/equipment accounting for over 14 % of expenditures.

If the $1.5 million EM funding scenario was implemented – assuming constant funding from other sources – SREL could loose of an additional 30 FTEs.

Given the size FY 2006 reductions that have already been absorbed by the FY 2006 reorganization of the SREL, it seems an open question how SREL could continue to meet the work scope contained in the cooperative agreement if further reductions are instituted. Moreover, the ultimate impact of reducing EM funding to $1.5 million would also depend on the following.

- Any additional costs associated with further, unplanned SREL personnel reductions. (The new agreement is scheduled to begin on October 1, 2006.)
- Any changes in the UGA financial commitment.
- Any changes in the NNSA financial commitment (about $300,000 core support and $200,000 project-specific support).
- Any changes in the ability to perform other planned SRS project-specific support (e.g., MWMF Groundwater, Integrated Operable Units).
- Any negative impacts on other SREL research projects (outside grants) because it could adversely affect the amount of overhead fees collected that are used to help support SREL operations.

Closure of SREL

The following is a brief description of the immediate impacts that would result if SREL ceased operations at SRS.

- SREL maintains important ecological databases that are used for regulatory compliance, including the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and Resource Conservation and Recovery Act (RCRA). The SRS Ecology Environmental Information Document (EEID) is the major site reference source for planning and regulatory project documents. Nearly 40% of the total publications cited in the EEID are from SREL. Moreover, SREL research accounts for over 75% of the peer-reviewed publications in the EEID. Without SREL: 1) existing SREL databases would be lost; 2) data interpretation by subject-matter experts would not be available; 3) existing databases would soon become out-dated; and 4) fewer new data bases would be developed.

- SREL supports ongoing regulatory compliance activities at the Mixed Waste Management Facility. SREL developed and is operating an automated vadose zone monitoring system to measure soil moisture and soil matric potential. Without SREL this expertise would lost.

- SREL helps DOE manage the SRS National Environmental Research Park (NERP) by hosting off-site scientists conducting research at SRS and by managing the 30 DOE Research Set-Aside areas at SRS. These 30 areas contain over 14,000 acres and provide an environmental baseline for the many different habitat types found at SRS. Baseline information is used in planning and regulatory documents to help predict impacts of ongoing, modified, or new SRS projects. Organisms collected from set-aside areas have been used to test methods of evaluating remediation and restoration actions as well as the development of terrestrial bio-assessment protocols. Without SREL, this expertise would have to be obtained from an off-site source.

- SREL conducts an integrated environmental outreach program for DOE. This program includes talks with schools and community groups, field trips and tours of SREL facilities, exhibits at community events, and workshops for area educators. At the request of DOE, SREL also makes presentations to the SRS Citizens Advisory Board, regulatory agency personnel, and other stakeholder groups. Topics include amphibian and reptile population declines, distribution and abundance of sensitive species, monitored natural attenuation, and ecological effects of radiological and chemical contamination. Without SREL, this opportunity to inform stakeholders on the ecological impacts of site operations would be lost.

- SREL conducts research that can improve the effectiveness of existing environmental cleanup strategies at SRS and other sites. SREL is currently conducting over 35 major research projects. This includes research to identify and document alternative cleanup strategies that rely more heavily on natural systems than engineering approaches as well as monitored natural attenuation. SREL research is focused on three major areas.
    - Environmental Characterization – This is the important first step in determining environmental and health risks and devising remediation and restoration strategies. It has physical, chemical, and biological components and spans molecular to landscape scales. Scientific knowledge gaps exist that impair accurate risk assessment, limit remediation and restoration activities, and make cost-effective management decisions difficult or impossible. For example, SREL is conducting a long-term study of hydrologic conditions and vegetation

responses in reference Carolina bay wetlands as a baseline for assessing wetland restoration success. Additional research is determining the chemical speciation of uranium and nickel in sediments and water of the Steed Pond-Tims Branch corridor.

- Ecological Risks and Effects – This research area attempts to reduce many of the knowledge gaps currently associated with ecological risk analyses and the effects that contaminants have on biota. It studies metal contamination, environmental transport, chronic low dose-rate irradiation, biomarkers, and ecological risk analyses. Research results are intended to assist EM in making better-informed decisions about remediation and land management. For example, controlled experiments are being conducted using low dose-rate irradiation to determine the genetic response and frequency of mutations in a model fish species. Other research on mixed wastes is determining the influence of nickel and uranium on trichloroethylene (TCE) degradation by TCE-degrading bacteria.
- Remediation and Restoration – This multidisciplinary research area is designed to develop remediation and restoration techniques that are protective of both human as well as ecosystem health. It studies engineered remediation (reducing contaminant migration, bioavailability, or receptor exposure), biologically-based remediation (using biological processes to remediate contaminants), and restoration (revitalizing degraded ecosystems). The goal is to help EM develop, evaluate, and achieve stakeholder acceptance of remediation and restoration projects. For example, SREL is conducting field studies to demonstrate the potential for using tree species (poplar, sweet gum, sycamore, loblolly pine, Leyland cypress) for remediation and restoration purposes on the SRS. SREL is also determining the effects of environmental conditions on rooting depth of native grasses used on closure caps for waste sites.

Without SREL, this EM-funded research would be terminated.

- SREL also conducts ecological research for other DOE organizations, federal, state and local agencies, scientific organizations, and private sector companies. These include the National Nuclear Security Administration, DOE Office of Science, Department of Defense, Environmental Protection Agency, South Carolina Department of Natural Resources, and the National Science Foundation. Research conducted for these organizations builds on existing SREL research capabilities, helps support SREL operations, and often has application to ongoing SREL research. However, EM funding provides the base support for SREL. The loss of EM funding would require SREL to close. Without SREL, these research projects could not continue.

- Approximately 100 employees would be terminated. This would include senior research faculty, researchers, technicians, and maintenance and administrative personnel.

DPR
9-25-06

[illegible]

Sent: Thursday, September 28, 2006 3:54 PM
To: Gilbertson, Mark; Anderson, Charles E
Cc: Hosaflook, Dennis; Ott, Karen; Alchowiak, Justine
Subject: Re: SREL

Mark-
Before the site mentioned this had to be done by end of sept, has that been pushed back and if so is there a new date by which an agreement has to be signed?

Sent from my BlackBerry Wireless Handheld

----- Original Message -----
From: Gilbertson, Mark
To: Anderson, Charles E
Cc: Fleshman, Justin; Hosaflook, Dennis; Ott, Karen; Alchowiak, Justine
Sent: Thu Sep 28 15:51:23 2006
Subject: SREL

Charlie,
Jeff and I talked for an hour on this today - I understand they want to talk about this on Monday when you are at the site. Jeff wants to move slow with this so that the path forward is well thought out (I agree). They would put the funds on H canyon if they did not put them here but they believe it should go forward as is.

Some of my views: The potential work scope should be scaled back and needs to be peer reviewed before we go forward. We don't need to support $1.5 Million in infrastructure for SREL. We should never agree to guaranteed multiple year funding with an escalator clause for future years. We should only have one lab at SR: these activities should be merged into the SRNL.

Mark

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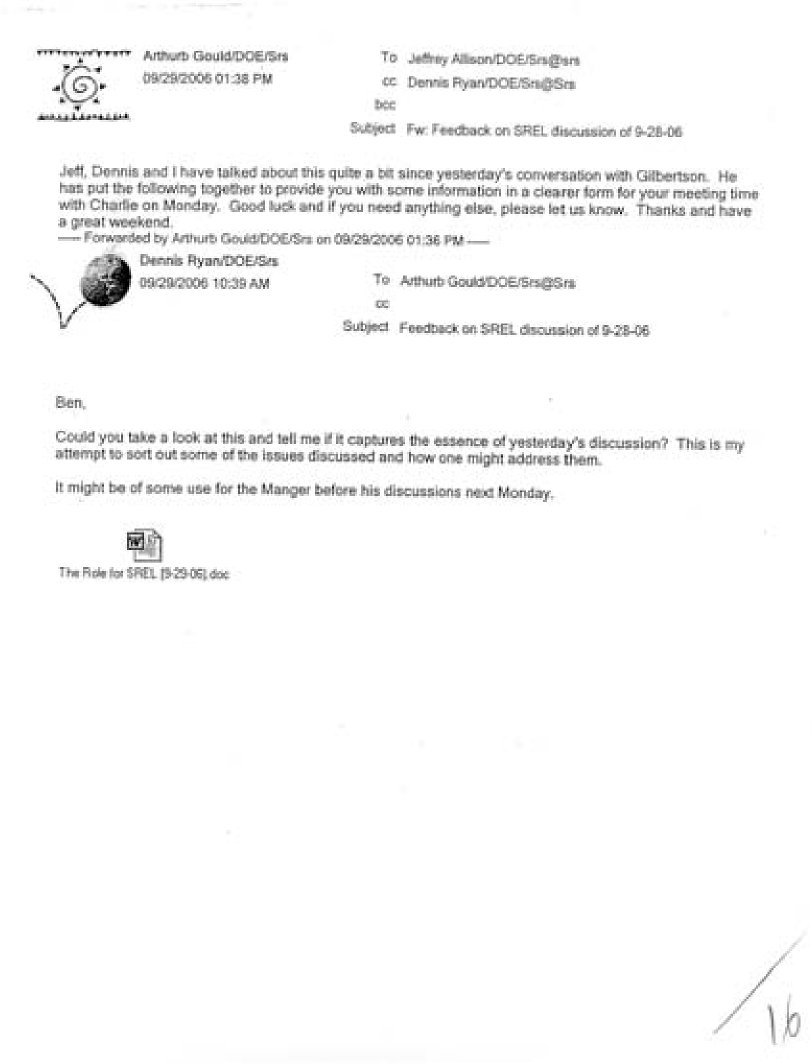

Arthurb Gould/DOE/Srs
09/29/2006 01:38 PM

To Jeffrey Allison/DOE/Srs@srs
cc Dennis Ryan/DOE/Srs@Srs
bcc
Subject Fw: Feedback on SREL discussion of 9-28-06

Jeff, Dennis and I have talked about this quite a bit since yesterday's conversation with Gilbertson. He has put the following together to provide you with some information in a clearer form for your meeting time with Charlie on Monday. Good luck and if you need anything else, please let us know. Thanks and have a great weekend.

----- Forwarded by Arthurb Gould/DOE/Srs on 09/29/2006 01:36 PM -----

Dennis Ryan/DOE/Srs
09/29/2006 10:39 AM

To Arthurb Gould/DOE/Srs@Srs
cc
Subject Feedback on SREL discussion of 9-28-06

Ben,

Could you take a look at this and tell me if it captures the essence of yesterday's discussion? This is my attempt to sort out some of the issues discussed and how one might address them.

It might be of some use for the Manger before his discussions next Monday.

The Role for SREL [9-29-06].doc

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The Role for SREL

SR receives tangible benefits from SREL

1. Peer reviewed, independent research (about 80 publications/year)
    - Accounts for 40% of the total and 75% of the peer-reviewed references found in SRS's Environmental Information Document (EID). The EID is used to prepare EM and NNSA planning and permitting documents.
    - Helps produce and maintain long-term environmental data bases as well as the on-site expertise to interpret this data.
    - Allows SREL to work with site organizations to help solve environmental problems (e.g., Mixed Waste Management Facility phytoremediation, wetland restoration).

2. Other services
    - Manages the National Environmental Research Park (NERP) for SR including management of the DOE Research Set-Asides.
    - Provides use of the University of Georgia (UGA) Conference Center.
    - Conducts ecological outreach and educational programs for SRS-area stakeholders, communities, schools, and the general public.

SR receives "intangible" (but real) benefits from SREL

1. SR credibility on environmental issues is enhanced because of its willingness to allow an independent assessment of the ecological impacts of SRS operations. Evidence of this credibility is reflected in the widespread community support for ongoing SRS operations and new missions.
2. SREL researchers are well respected and have earned national and international recognition as experts in ecological science. SR support of this expertise reflects favorably on DOE and its commitment to explore science-based solutions to operational issues, including environmental cleanup.
3. Over the years (perhaps because SRS had no DOE national laboratory), SREL research, education and outreach efforts have been instrumental in conveying a balanced, accurate picture of SRS environmental conditions and the ecological effects of site operations.

SREL is cost-effective

1. Salaries, wages, and benefits are based on university rates. This includes all senior research faculty, research assistants, administrative support, and facility maintenance personnel (68 FTEs for FY 2007). This provides a substantial savings over M&O rates.
2. UGA helps to financially support SREL operations.
    - In FY 2006, UGA contributed nearly one million dollars (e.g., salaries and benefits for six senior research positions).
    - UGA independently funded and continues to maintain a one-million dollar conference center at SRS that is also made available for DOE use.

- UGA has helped buy tens-of-thousands of dollars worth of specialized research equipment for the SREL.

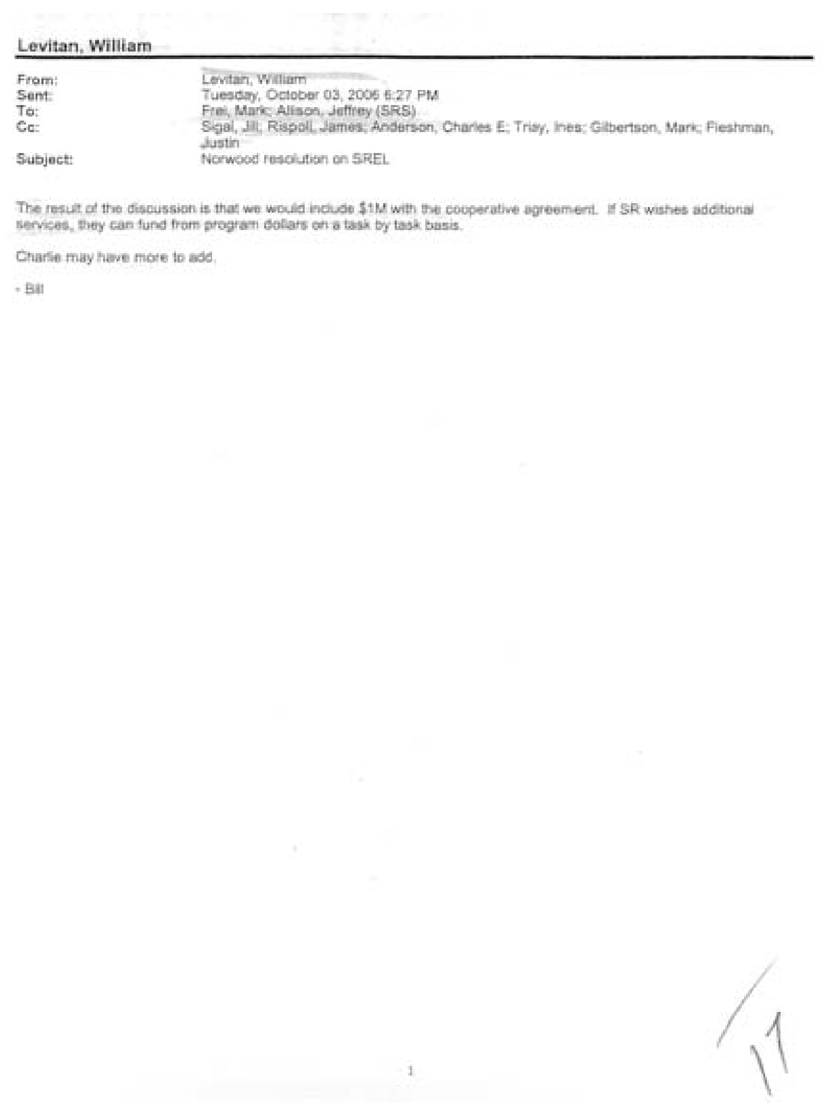
3. The 11.5% UGA indirect cost rate is extremely low. This allows more cooperative agreement dollars to be used to fund research at SREL.
4. The SREL agreement also allows other site organizations to contribute to the SREL mission. For example, in FY 2006, NNSA contributed about $500,000 to support SREL operations and fund project-specific support.
5. SREL also receives about two million dollars/year in outside funding for ecological research. Similar to SRNL, the overhead charged to these outside organizations helps maintain facilities and technical expertise, thereby reducing SREL operational costs.

SREL and SRNL

1. There is currently little overlap in the research being conducted at SREL and SRNL. However, SRNL is currently preparing a new strategic plan.
2. Elimination of SREL will not improve the amount, quality, or acceptance of research conducted by SRNL.
3. SREL has in the past – and is today – working cooperatively with SRNL on research projects and proposals of mutual interest.
4. There are sometimes inherent advantages to having two separate research organizations at SRS. For example, because SRNL is a federally-funded research center (FFRC), SRNL can not compete for certain funding, including programs supported by the National Science Foundation (NSF). On the other hand, SREL is eligible to compete for NSF funding and has successfully done so.
5. It has been stated that the existence of SRNL (with an environmental component) and a separate SREL may be confusing/troubling to EM stakeholders and the general public. However, it is equally likely that the elimination of SREL would be confusing/troubling to SRS stakeholders and the public in the area of SRS.

Options

1. Treat SREL as a "landlord" responsibility based on the tangible and intangible benefits it provides to SR. This would allow SRNL to focus on EM complex-wide issues. SR and EM could continue to encourage SREL and SRNL to cooperate on research where appropriate. The new DOE/UGA cooperative agreement would enable this option. If desired, upon completion of the SRNL strategic plan a SR, EM, SREL, and SRNL task team could be created to coordinate activities.
2. Somehow, fold SREL into the new SRNL organization without compromising the independent review mandate that is the primary mission for SREL. It is not clear how this would be instituted and it would require buy-in from UGA.
3. Allow the SREL cooperative agreement to expire (probably without buy-in from UGA) and let SRNL select what portions, if any, of the existing SREL work scope to incorporate into the developing SRNL program.



Levitan, William

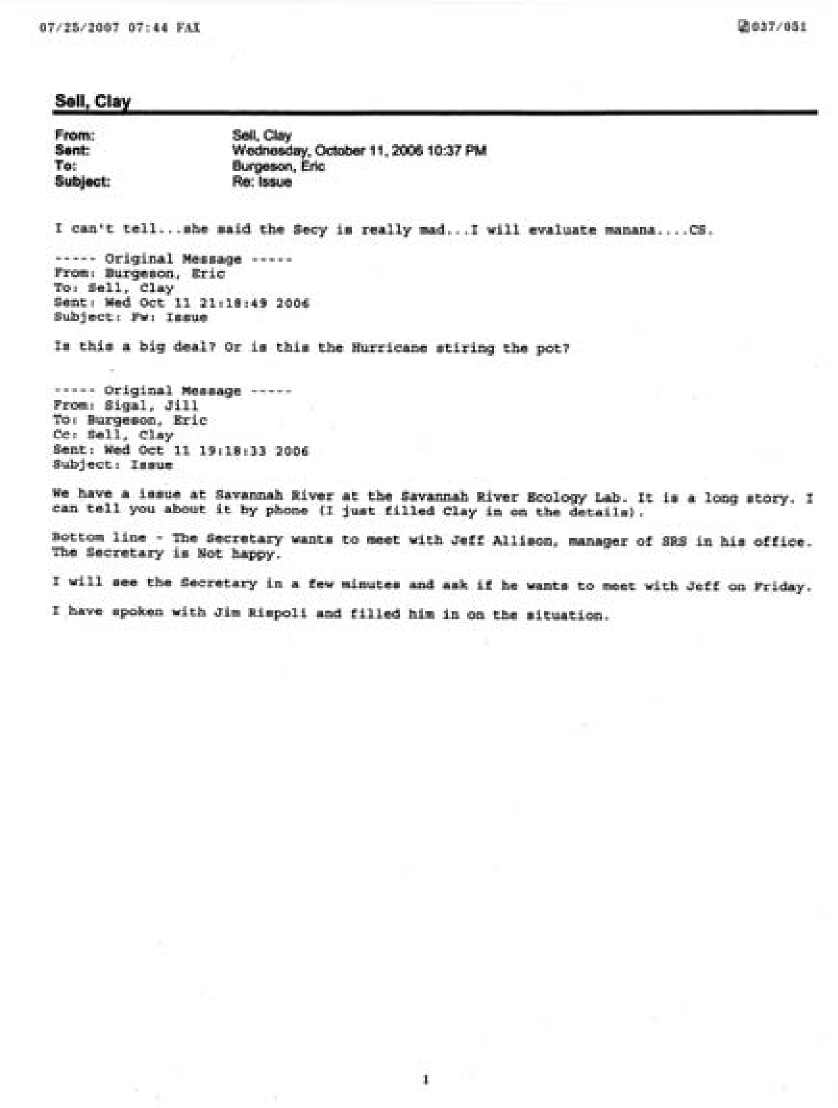
From: Levitan, William
Sent: Tuesday, October 03, 2006 6:27 PM
To: Frei, Mark; Allison, Jeffrey (SRS)
Cc: Sigal, Jill; Rispoli, James; Anderson, Charles E; Triay, Ines; Gilbertson, Mark; Fleshman, Justin
Subject: Norwood resolution on SREL

The result of the discussion is that we would include $1M with the cooperative agreement. If SR wishes additional services, they can fund from program dollars on a task by task basis.

Charlie may have more to add.

- Bill

17



07/25/2007 07:44 FAX 037/051

Sell, Clay

From: Sell, Clay
Sent: Wednesday, October 11, 2006 10:37 PM
To: Burgeson, Eric
Subject: Re: Issue

I can't tell...she said the Secy is really mad...I will evaluate manana....CS.

----- Original Message -----
From: Burgeson, Eric
To: Sell, Clay
Sent: Wed Oct 11 21:18:49 2006
Subject: Fw: Issue

Is this a big deal? Or is this the Hurricane stiring the pot?

----- Original Message -----
From: Sigal, Jill
To: Burgeson, Eric
Cc: Sell, Clay
Sent: Wed Oct 11 19:18:33 2006
Subject: Issue

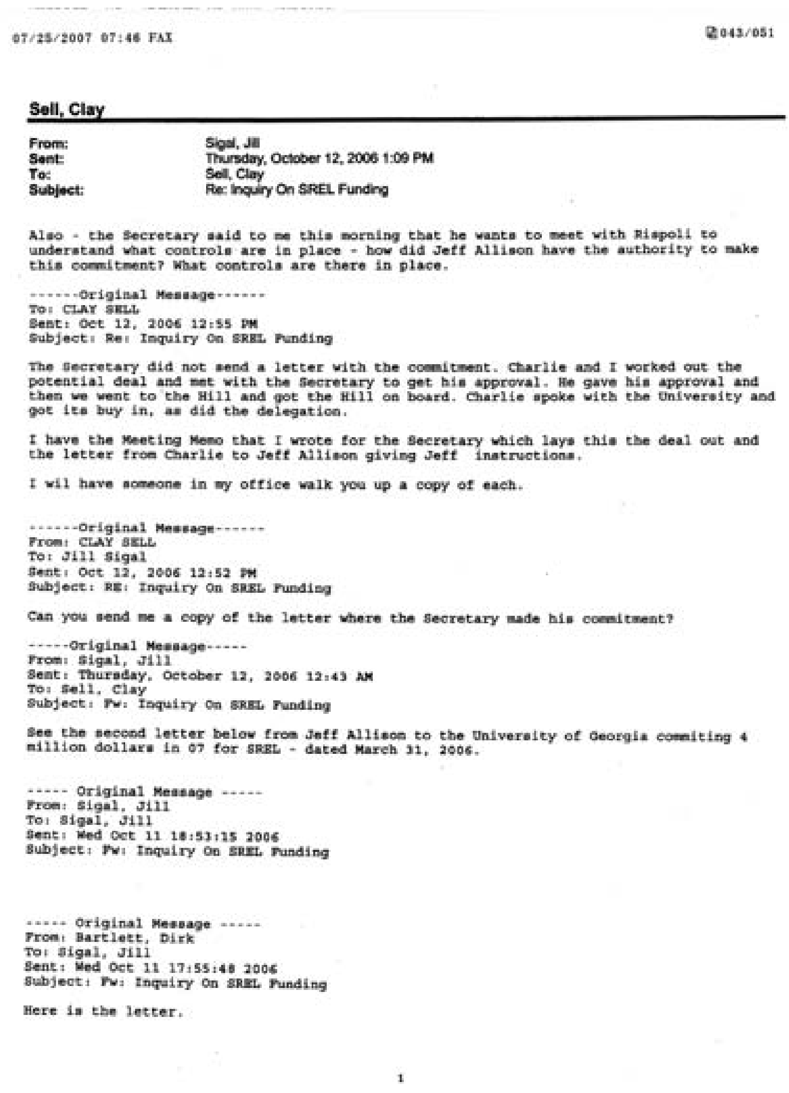
We have a issue at Savannah River at the Savannah River Ecology Lab. It is a long story. I can tell you about it by phone (I just filled Clay in on the details).

Bottom line - The Secretary wants to meet with Jeff Allison, manager of SRS in his office. The Secretary is Not happy.

I will see the Secretary in a few minutes and ask if he wants to meet with Jeff on Friday.

I have spoken with Jim Rispoli and filled him in on the situation.

1



Sell, Clay

From: Sigal, Jill
Sent: Thursday, October 12, 2006 1:09 PM
To: Sell, Clay
Subject: Re: Inquiry On SREL Funding

Also - the Secretary said to me this morning that he wants to meet with Rispoli to understand what controls are in place - how did Jeff Allison have the authority to make this commitment? What controls are there in place.

------Original Message------
To: CLAY SELL
Sent: Oct 12, 2006 12:55 PM
Subject: Re: Inquiry On SREL Funding

The Secretary did not send a letter with the commitment. Charlie and I worked out the potential deal and met with the Secretary to get his approval. He gave his approval and then we went to the Hill and got the Hill on board. Charlie spoke with the University and got its buy in, as did the delegation.

I have the Meeting Memo that I wrote for the Secretary which lays this the deal out and the letter from Charlie to Jeff Allison giving Jeff instructions.

I wil have someone in my office walk you up a copy of each.

------Original Message------
From: CLAY SELL
To: Jill Sigal
Sent: Oct 12, 2006 12:52 PM
Subject: RE: Inquiry On SREL Funding

Can you send me a copy of the letter where the Secretary made his commitment?

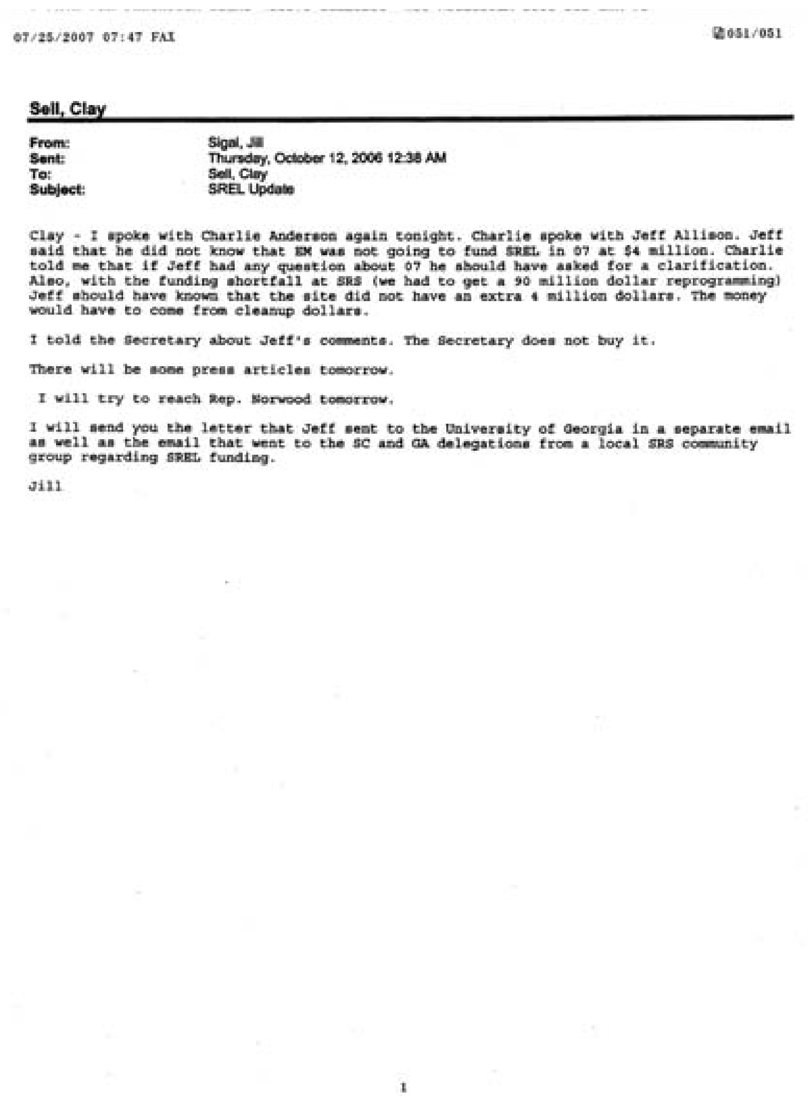
-----Original Message-----
From: Sigal, Jill
Sent: Thursday, October 12, 2006 12:43 AM
To: Sell, Clay
Subject: Fw: Inquiry On SREL Funding

See the second letter below from Jeff Allison to the University of Georgia commiting 4 million dollars in 07 for SREL - dated March 31, 2006.

----- Original Message -----
From: Sigal, Jill
To: Sigal, Jill
Sent: Wed Oct 11 18:53:15 2006
Subject: Fw: Inquiry On SREL Funding

----- Original Message -----
From: Bartlett, Dirk
To: Sigal, Jill
Sent: Wed Oct 11 17:55:48 2006
Subject: Fw: Inquiry On SREL Funding

Here is the letter.



07/25/2007 07:47 FAX 051/051

Sell, Clay

From: Sigal, Jill
Sent: Thursday, October 12, 2006 12:38 AM
To: Sell, Clay
Subject: SREL Update

Clay - I spoke with Charlie Anderson again tonight. Charlie spoke with Jeff Allison. Jeff said that he did not know that EM was not going to fund SREL in 07 at $4 million. Charlie told me that if Jeff had any question about 07 he should have asked for a clarification. Also, with the funding shortfall at SRS (we had to get a 90 million dollar reprogramming) Jeff should have known that the site did not have an extra 4 million dollars. The money would have to come from cleanup dollars.

I told the Secretary about Jeff's comments. The Secretary does not buy it.

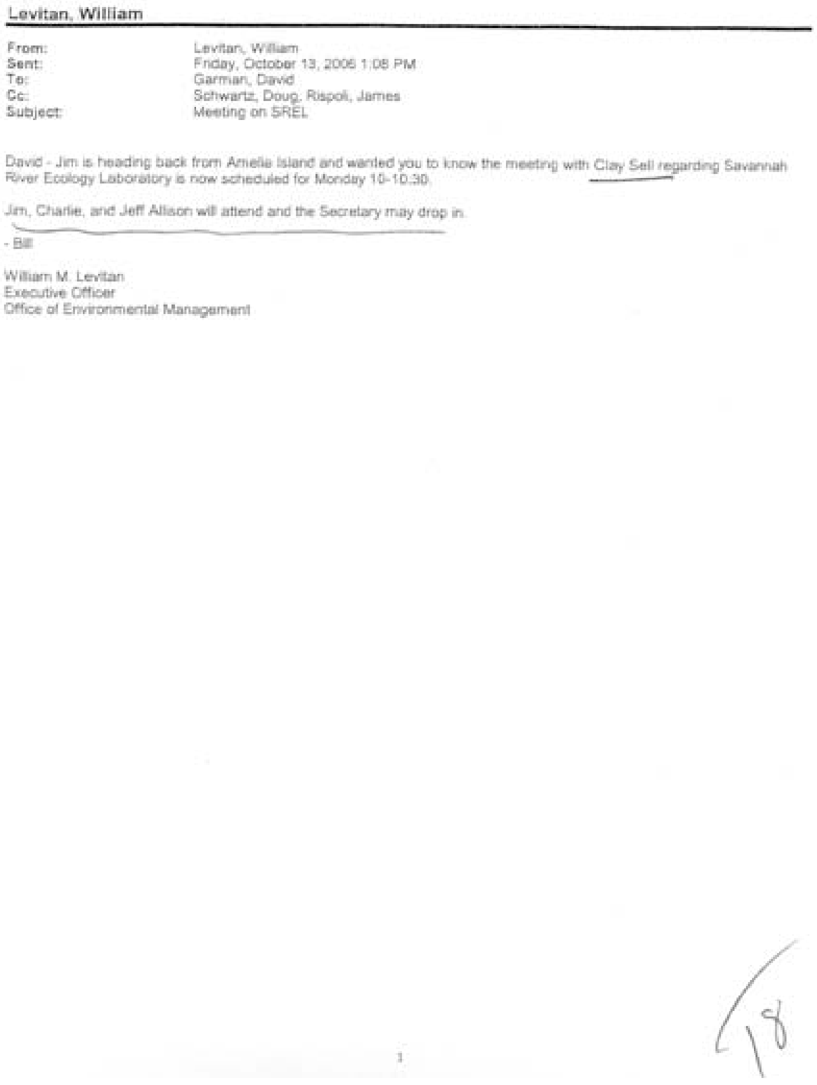
There will be some press articles tomorrow.

I will try to reach Rep. Norwood tomorrow.

I will send you the letter that Jeff sent to the University of Georgia in a separate email as well as the email that went to the SC and GA delegations from a local SRS community group regarding SREL funding.

Jill

1



Levitan, William

From:	Levitan, William
Sent:	Friday, October 13, 2006 1:08 PM
To:	Garman, David
Cc:	Schwartz, Doug; Rispoli, James
Subject:	Meeting on SREL

David - Jim is heading back from Amelia Island and wanted you to know the meeting with Clay Sell regarding Savannah River Ecology Laboratory is now scheduled for Monday 10-10:30.

Jim, Charlie, and Jeff Allison will attend and the Secretary may drop in.

- Bill

William M. Levitan
Executive Officer
Office of Environmental Management

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Levitan, William

From: Levitan, William
Sent: Friday, October 13, 2006 3:06 PM
To: Frei, Mark; Triay, Ines; Gilbertson, Mark
Cc: Anderson, Charles E
Subject: RE: Question - FOR YOUR REVIEW

Mark G walked in (he had just come from Mark F's office after Mark F had sent the below message). We would suggest simplifying this because Jill may get confused with our PBS jargon. So we have removed some phrases and sentences from Mark F's edits below.

-----Original Message-----
From: Frei, Mark
Sent: Friday, October 13, 2006 2:50 PM
To: Triay, Ines; Gilbertson, Mark; Levitan, William
Cc: Anderson, Charles E
Subject: RE: Question - FOR YOUR REVIEW

A few edits to clarify the answer.

-----Original Message-----
From: Triay, Ines
Sent: Friday, October 13, 2006 2:42 PM
To: Gilbertson, Mark; Frei, Mark; Levitan, William
Cc: Anderson, Charles E; Triay, Ines
Subject: FW: Question - FOR YOUR REVIEW
Importance: High

Please review ASAP. Thanks, Ines

Q: Does Jeff Allison have the authority to commit 4 million dollars to SREL without approval from Ines, Charlie or Jim?

A: Yes. EM/HQ denied SRS's request for non-labor dollars and informed SRS that funding for SREL needed to be allocated from programmatic SRS dollars within the SRS target funding for FY07. Programmatic dollars are directly tied to accomplishing the mission of the EM cleanup. While no Field Manager has authority to commit funding for non-labor resources without the approval of EM/HQ, every field manager has the authority to commit programmatic funding within their site's target funding for cleanup workscope. Jeff Allison exercised that authority by committing $4M of cleanup workscope funding (i.e., programmatic funds) to SREL in FY07, thereby fulfilling the request from EM-2 to enter into a cooperative agreement with SREL beginning in July 2006 for future SREL activities.

-----Original Message-----
From: Sigal, Jill
Sent: Wednesday, October 11, 2006 10:00 PM
To: Triay, Ines
Subject: Question
Importance: High

Ines - Does Jeff Allison have the authority to commit 4 million dollars to SREL without approval from you, Charlie or Jim?

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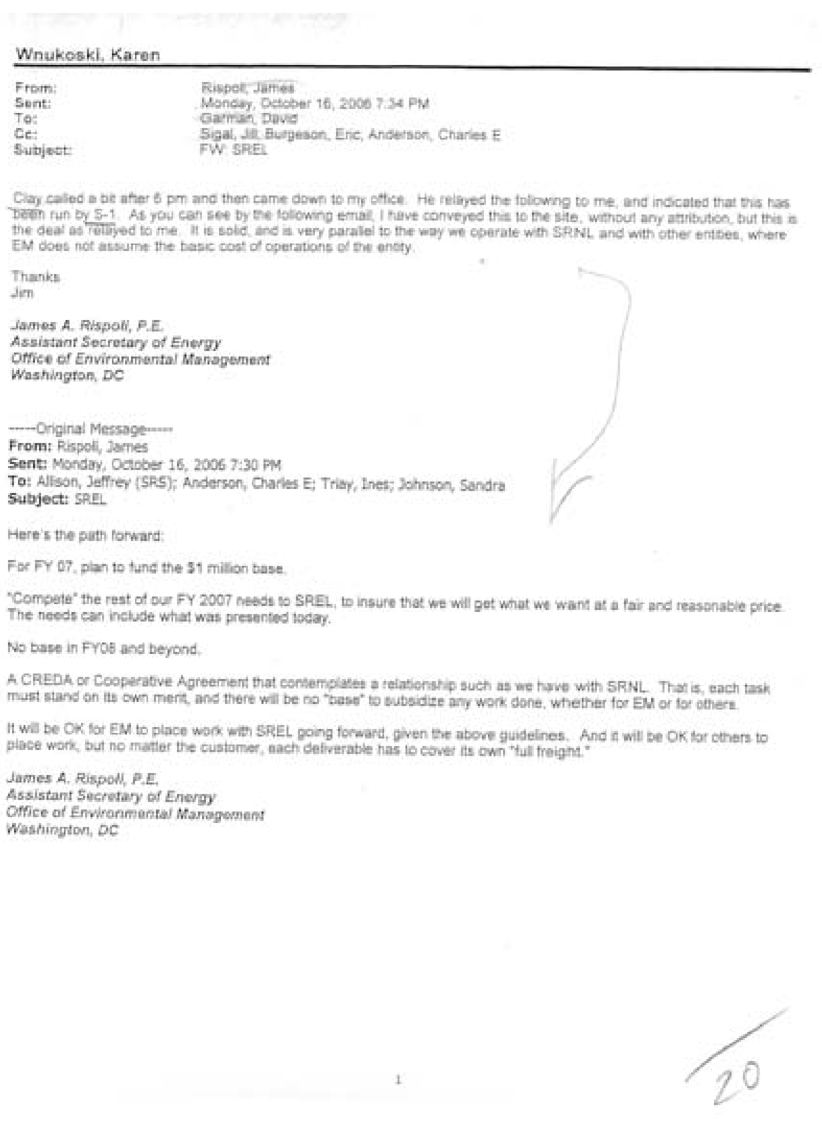


Wnukoski, Karen

From: Rispoli, James
Sent: Monday, October 16, 2006 7:34 PM
To: Garman, David
Cc: Sigal, Jill; Burgeson, Eric; Anderson, Charles E
Subject: FW: SREL

Clay called a bit after 6 pm and then came down to my office. He relayed the following to me, and indicated that this has been run by S-1. As you can see by the following email, I have conveyed this to the site, without any attribution, but this is the deal as relayed to me. It is solid, and is very parallel to the way we operate with SRNL and with other entities, where EM does not assume the basic cost of operations of the entity.

Thanks
Jim

James A. Rispoli, P.E.
Assistant Secretary of Energy
Office of Environmental Management
Washington, DC

-----Original Message-----
From: Rispoli, James
Sent: Monday, October 16, 2006 7:30 PM
To: Allison, Jeffrey (SRS); Anderson, Charles E; Triay, Ines; Johnson, Sandra
Subject: SREL

Here's the path forward:

For FY 07, plan to fund the $1 million base.

"Compete" the rest of our FY 2007 needs to SREL, to insure that we will get what we want at a fair and reasonable price. The needs can include what was presented today.

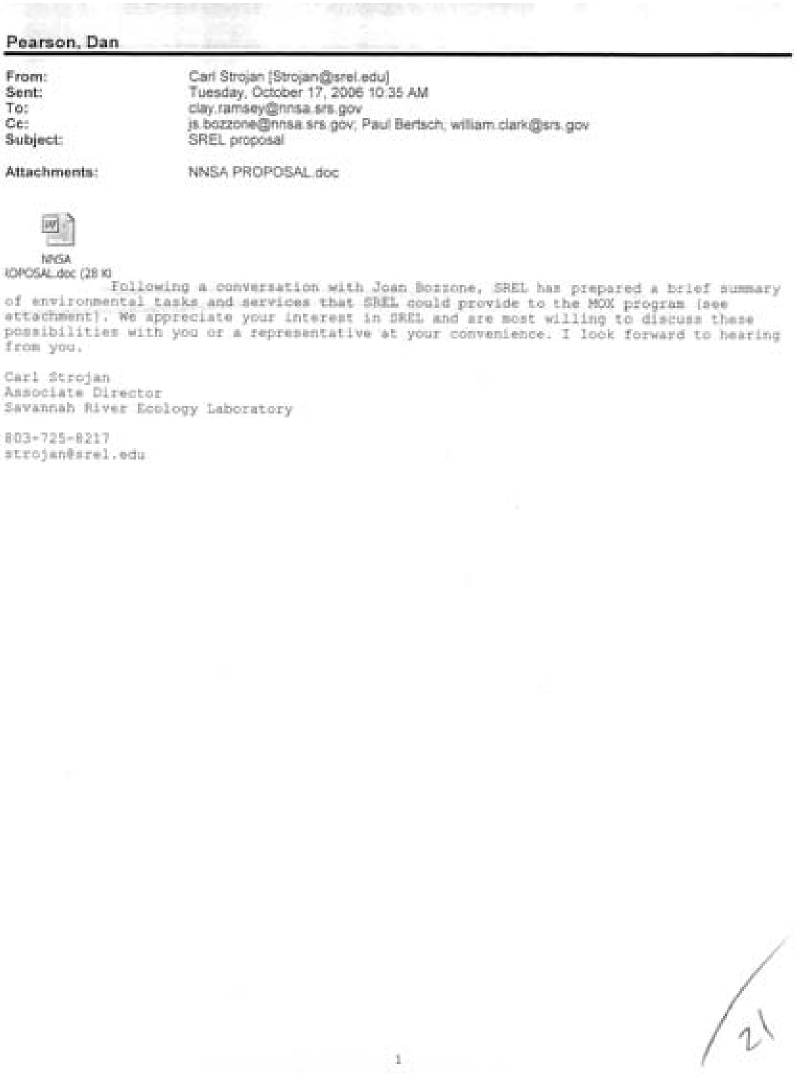
No base in FY08 and beyond.

A CREDA or Cooperative Agreement that contemplates a relationship such as we have with SRNL. That is, each task must stand on its own merit, and there will be no "base" to subsidize any work done, whether for EM or for others.

It will be OK for EM to place work with SREL going forward, given the above guidelines. And it will be OK for others to place work, but no matter the customer, each deliverable has to cover its own "full freight."

James A. Rispoli, P.E.
Assistant Secretary of Energy
Office of Environmental Management
Washington, DC

20



Pearson, Dan

From: Carl Strojan [Strojan@srel.edu]
Sent: Tuesday, October 17, 2006 10:35 AM
To: clay.ramsey@nnsa.srs.gov
Cc: js.bozzone@nnsa.srs.gov; Paul Bertsch; william.clark@srs.gov
Subject: SREL proposal

Attachments: NNSA PROPOSAL.doc

NNSA
ROPOSAL.doc (28 K)

Following a conversation with Joan Bozzone, SREL has prepared a brief summary of environmental tasks and services that SREL could provide to the MOX program (see attachment). We appreciate your interest in SREL and are most willing to discuss these possibilities with you or a representative at your convenience. I look forward to hearing from you.

Carl Strojan
Associate Director
Savannah River Ecology Laboratory

803-725-8217
strojan@srel.edu

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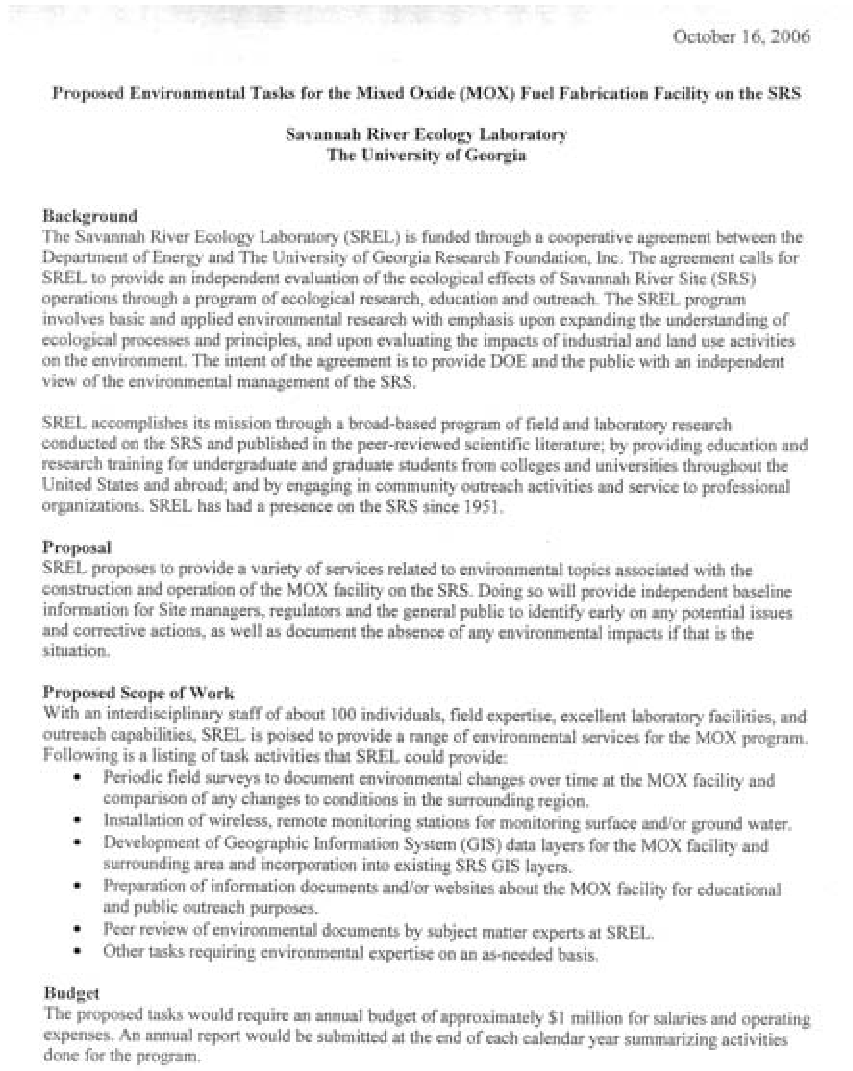


October 16, 2006

Proposed Environmental Tasks for the Mixed Oxide (MOX) Fuel Fabrication Facility on the SRS

Savannah River Ecology Laboratory
The University of Georgia

Background
The Savannah River Ecology Laboratory (SREL) is funded through a cooperative agreement between the Department of Energy and The University of Georgia Research Foundation, Inc. The agreement calls for SREL to provide an independent evaluation of the ecological effects of Savannah River Site (SRS) operations through a program of ecological research, education and outreach. The SREL program involves basic and applied environmental research with emphasis upon expanding the understanding of ecological processes and principles, and upon evaluating the impacts of industrial and land use activities on the environment. The intent of the agreement is to provide DOE and the public with an independent view of the environmental management of the SRS.

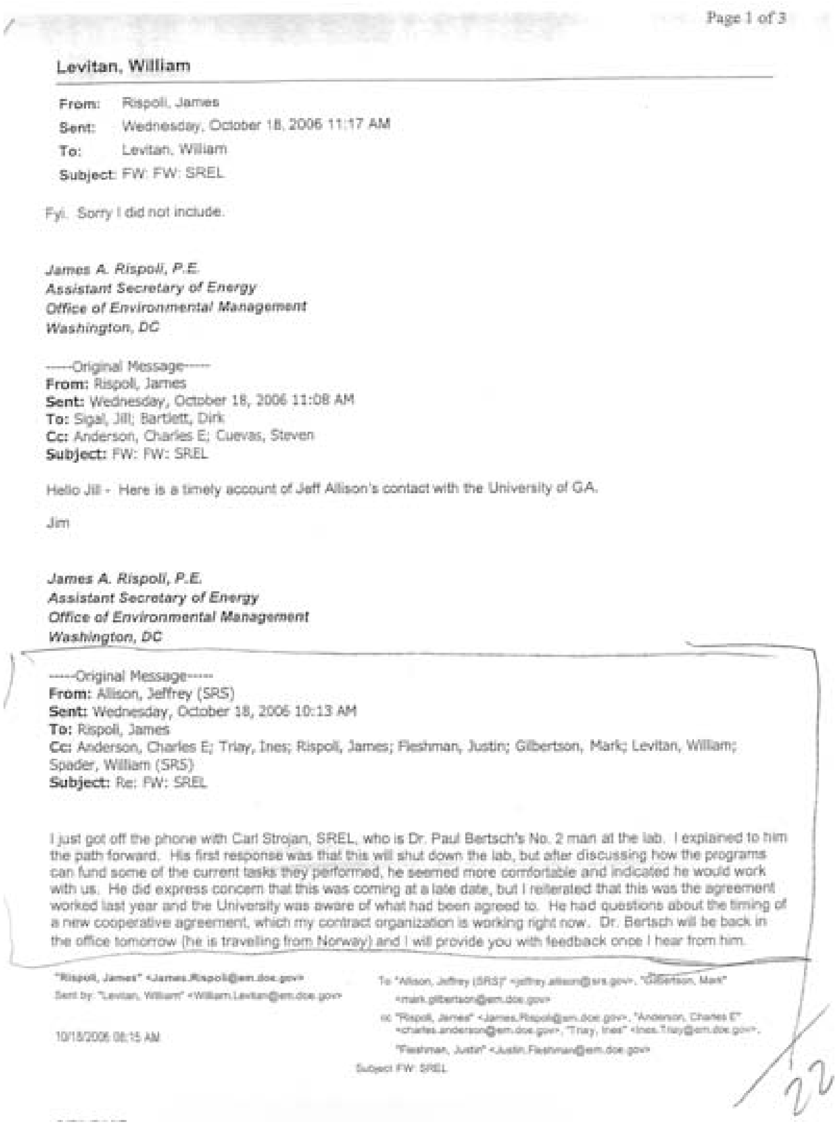
SREL accomplishes its mission through a broad-based program of field and laboratory research conducted on the SRS and published in the peer-reviewed scientific literature; by providing education and research training for undergraduate and graduate students from colleges and universities throughout the United States and abroad; and by engaging in community outreach activities and service to professional organizations. SREL has had a presence on the SRS since 1951.

Proposal
SREL proposes to provide a variety of services related to environmental topics associated with the construction and operation of the MOX facility on the SRS. Doing so will provide independent baseline information for Site managers, regulators and the general public to identify early on any potential issues and corrective actions, as well as document the absence of any environmental impacts if that is the situation.

Proposed Scope of Work
With an interdisciplinary staff of about 100 individuals, field expertise, excellent laboratory facilities, and outreach capabilities, SREL is poised to provide a range of environmental services for the MOX program. Following is a listing of task activities that SREL could provide:

- Periodic field surveys to document environmental changes over time at the MOX facility and comparison of any changes to conditions in the surrounding region.
- Installation of wireless, remote monitoring stations for monitoring surface and/or ground water.
- Development of Geographic Information System (GIS) data layers for the MOX facility and surrounding area and incorporation into existing SRS GIS layers.
- Preparation of information documents and/or websites about the MOX facility for educational and public outreach purposes.
- Peer review of environmental documents by subject matter experts at SREL.
- Other tasks requiring environmental expertise on an as-needed basis.

Budget
The proposed tasks would require an annual budget of approximately $1 million for salaries and operating expenses. An annual report would be submitted at the end of each calendar year summarizing activities done for the program.



Levitan, William

From: Rispoli, James
Sent: Wednesday, October 18, 2006 11:17 AM
To: Levitan, William
Subject: FW: FW: SREL

Fyi. Sorry I did not include.

James A. Rispoli, P.E.
Assistant Secretary of Energy
Office of Environmental Management
Washington, DC

-----Original Message-----
From: Rispoli, James
Sent: Wednesday, October 18, 2006 11:08 AM
To: Sigal, Jill; Bartlett, Dirk
Cc: Anderson, Charles E; Cuevas, Steven
Subject: FW: FW: SREL

Hello Jill - Here is a timely account of Jeff Allison's contact with the University of GA.

Jim

James A. Rispoli, P.E.
Assistant Secretary of Energy
Office of Environmental Management
Washington, DC

-----Original Message-----
From: Allison, Jeffrey (SRS)
Sent: Wednesday, October 18, 2006 10:13 AM
To: Rispoli, James
Cc: Anderson, Charles E; Triay, Ines; Rispoli, James; Fleshman, Justin; Gilbertson, Mark; Levitan, William; Spader, William (SRS)
Subject: Re: FW: SREL

I just got off the phone with Carl Strojan, SREL, who is Dr. Paul Bertsch's No. 2 man at the lab. I explained to him the path forward. His first response was that this will shut down the lab, but after discussing how the programs can fund some of the current tasks they performed, he seemed more comfortable and indicated he would work with us. He did express concern that this was coming at a late date, but I reiterated that this was the agreement worked last year and the University was aware of what had been agreed to. He had questions about the timing of a new cooperative agreement, which my contract organization is working right now. Dr. Bertsch will be back in the office tomorrow (he is travelling from Norway) and I will provide you with feedback once I hear from him.

"Rispoli, James" <James.Rispoli@em.doe.gov>
Sent by: "Levitan, William" <William.Levitan@em.doe.gov>

10/18/2006 08:15 AM

To "Allison, Jeffrey (SRS)" <jeffrey.allison@srs.gov>, "Gilbertson, Mark" <mark.gilbertson@em.doe.gov>
cc "Rispoli, James" <James.Rispoli@em.doe.gov>, "Anderson, Charles E" <charles.anderson@em.doe.gov>, "Triay, Ines" <Ines.Triay@em.doe.gov>, "Fleshman, Justin" <Justin.Fleshman@em.doe.gov>
Subject FW: SREL

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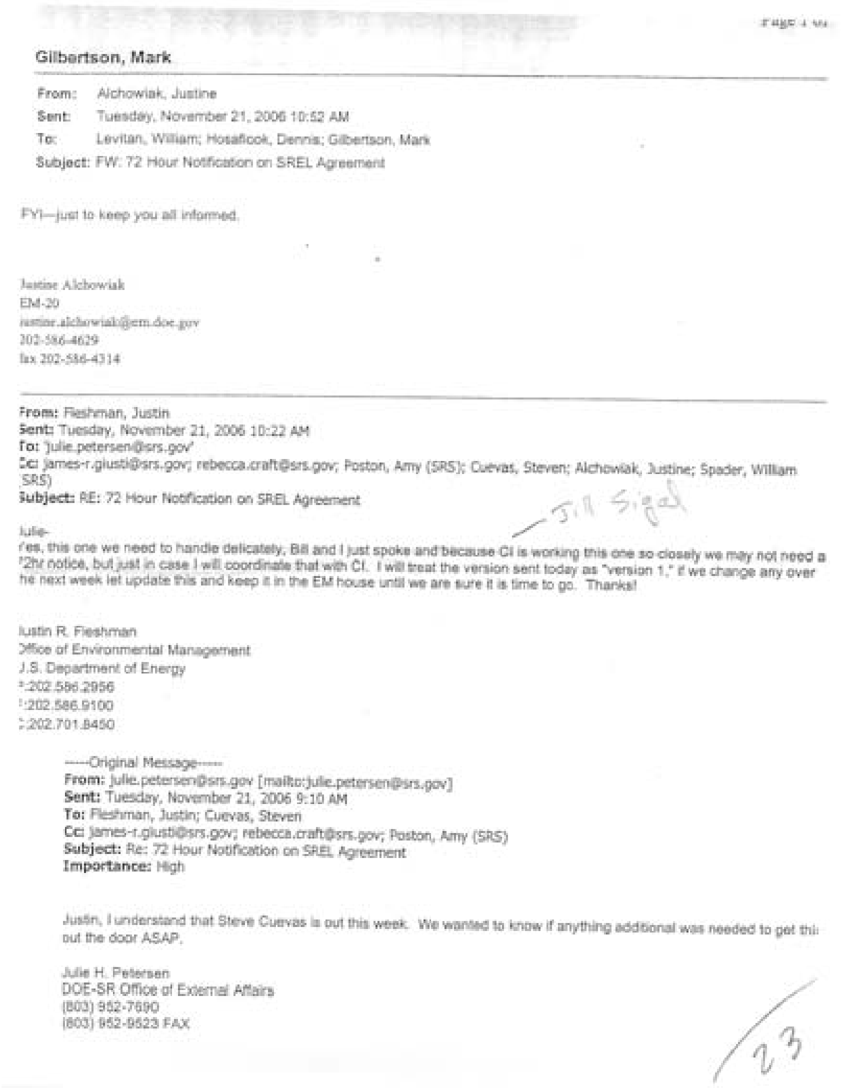

Page 1 of

Gilbertson, Mark

From: Alchowiak, Justine
Sent: Tuesday, November 21, 2006 10:52 AM
To: Levitan, William; Hosaflook, Dennis; Gilbertson, Mark
Subject: FW: 72 Hour Notification on SREL Agreement

FYI—just to keep you all informed.

Justine Alchowiak
EM-20
justine.alchowiak@em.doe.gov
202-586-4629
fax 202-586-4314

From: Fleshman, Justin
Sent: Tuesday, November 21, 2006 10:22 AM
To: 'julie.petersen@srs.gov'
Cc: james-r.giusti@srs.gov; rebecca.craft@srs.gov; Poston, Amy (SRS); Cuevas, Steven; Alchowiak, Justine; Spader, William (SRS)
Subject: RE: 72 Hour Notification on SREL Agreement

— Jill Sigal

Julie-
Yes, this one we need to handle delicately, Bill and I just spoke and because CI is working this one so closely we may not need a 72hr notice, but just in case I will coordinate that with CI. I will treat the version sent today as "version 1," if we change any over the next week let update this and keep it in the EM house until we are sure it is time to go. Thanks!

Justin R. Fleshman
Office of Environmental Management
U.S. Department of Energy
P:202.586.2956
F:202.586.9100
C:202.701.8450

-----Original Message-----
From: julie.petersen@srs.gov [mailto:julie.petersen@srs.gov]
Sent: Tuesday, November 21, 2006 9:10 AM
To: Fleshman, Justin; Cuevas, Steven
Cc: james-r.giusti@srs.gov; rebecca.craft@srs.gov; Poston, Amy (SRS)
Subject: Re: 72 Hour Notification on SREL Agreement
Importance: High

Justin, I understand that Steve Cuevas is out this week. We wanted to know if anything additional was needed to get thi
out the door ASAP.

Julie H. Petersen
DOE-SR Office of External Affairs
(803) 952-7690
(803) 952-9523 FAX

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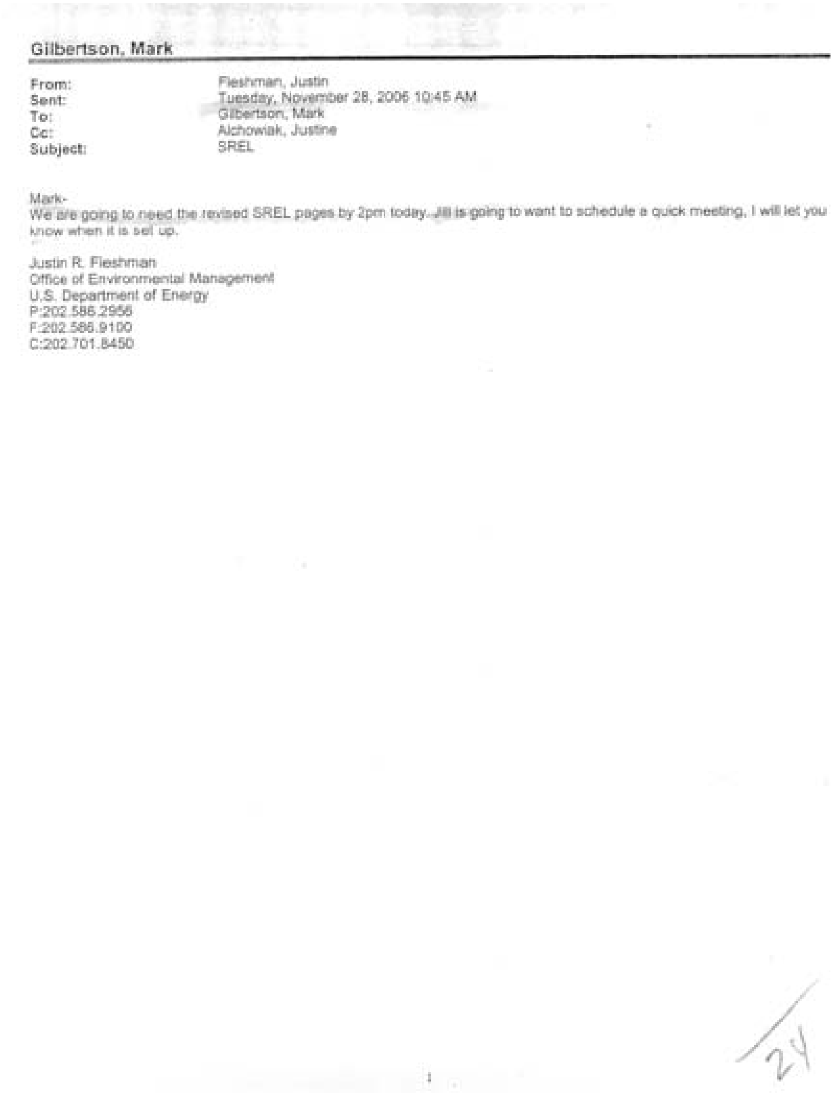

Gilbertson, Mark

From:	Fleshman, Justin
Sent:	Tuesday, November 28, 2006 10:45 AM
To:	Gilbertson, Mark
Cc:	Alchowiak, Justine
Subject:	SREL

Mark-
We are going to need the revised SREL pages by 2pm today. Jill is going to want to schedule a quick meeting, I will let you know when it is set up.

Justin R. Fleshman
Office of Environmental Management
U.S. Department of Energy
P:202.586.2956
F:202.586.9100
C:202.701.8450

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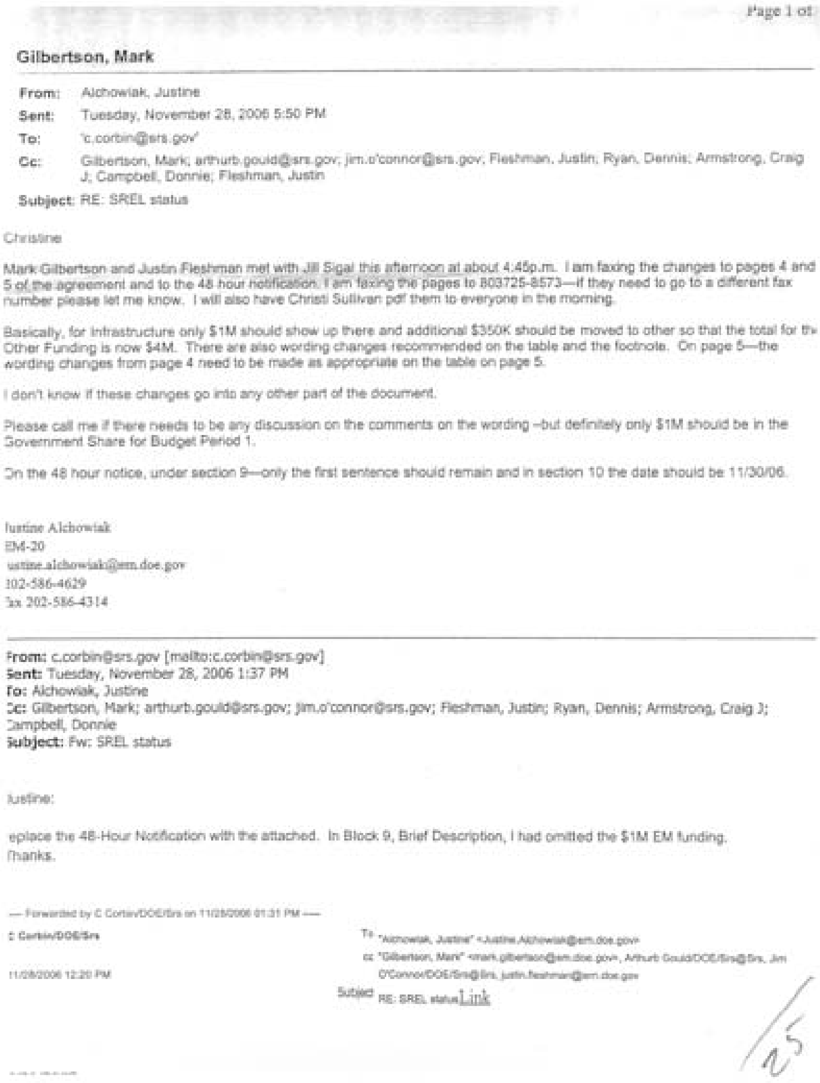

Page 1 of

Gilbertson, Mark

From: Alchowiak, Justine
Sent: Tuesday, November 28, 2006 5:50 PM
To: 'c.corbin@srs.gov'
Cc: Gilbertson, Mark; arthurb.gould@srs.gov; jim.o'connor@srs.gov; Fleshman, Justin; Ryan, Dennis; Armstrong, Craig J; Campbell, Donnie; Fleshman, Justin
Subject: RE: SREL status

Christine

Mark Gilbertson and Justin Fleshman met with Jill Sigal this afternoon at about 4:45p.m. I am faxing the changes to pages 4 and 5 of the agreement and to the 48 hour notification. I am faxing the pages to 803725-8573—if they need to go to a different fax number please let me know. I will also have Christi Sullivan pdf them to everyone in the morning.

Basically, for infrastructure only $1M should show up there and additional $350K should be moved to other so that the total for the Other Funding is now $4M. There are also wording changes recommended on the table and the footnote. On page 5—the wording changes from page 4 need to be made as appropriate on the table on page 5.

I don't know if these changes go into any other part of the document.

Please call me if there needs to be any discussion on the comments on the wording –but definitely only $1M should be in the Government Share for Budget Period 1.

On the 48 hour notice, under section 9—only the first sentence should remain and in section 10 the date should be 11/30/06.

Justine Alchowiak
EM-20
ustine.alchowiak@em.doe.gov
02-586-4629
ax 202-586-4314

From: c.corbin@srs.gov [mailto:c.corbin@srs.gov]
Sent: Tuesday, November 28, 2006 1:37 PM
To: Alchowiak, Justine
Cc: Gilbertson, Mark; arthurb.gould@srs.gov; jim.o'connor@srs.gov; Fleshman, Justin; Ryan, Dennis; Armstrong, Craig J; Campbell, Donnie
Subject: Fw: SREL status

Justine:

eplace the 48-Hour Notification with the attached. In Block 9, Brief Description, I had omitted the $1M EM funding.
Thanks.

— Forwarded by C Corbin/DOE/Srs on 11/28/2006 01:31 PM —

C Corbin/DOE/Srs

11/28/2006 12:20 PM

To "Alchowiak, Justine" <Justine.Alchowiak@em.doe.gov>
cc "Gilbertson, Mark" <mark.gilbertson@em.doe.gov>, Arthurb Gould/DOE/Srs@Srs, Jim O'Connor/DOE/Srs@Srs, justin.fleshman@em.doe.gov
Subject RE: SREL status Link

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Yvette Collazo/DOE/Srs
11/29/2006 03:30 PM

To William Spader/DOE/Srs@Srs
cc Jim O'Connor/DOE/Srs@Srs, Wade Whitaker/DOE/Srs, Arthurb Gould/DOE/Srs@Srs, Dennis Ryan/DOE/Srs@Srs
bcc
Subject Fw: Analysis of Potential SGP Funding for SREL Tasks

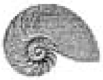
Bill,

Per our discussion earlier today, I support the $396K plus the $270K as described below. That brings the total AMCP contribution to $666K (which increases AMCP contribution to 20%, although the AMCP budget is 9% of the total for the three projects).

Thanks,

Yvette T. Collazo
Assistant Manager for Closure Project
US Dept. of Energy, Savannah River Operations Office
P.O. Box A, Aiken, SC 29802
(W) 803-952-9695 (C) 803-507-5585
(P) 803-725-7243 #20266 (F) 803-952-7710
email: yvette.collazo@srs.gov

----- Forwarded by Yvette Collazo/DOE/Srs on 11/29/2006 03:18 PM -----



Wade Whitaker/DOE/Srs
11/29/2006 03:09 PM

To Yvette Collazo/DOE/Srs@Srs
cc
Subject Analysis of Potential SGP Funding for SREL Tasks

Yvette, as you requested, the following is the subject analysis:

SGP is providing to SREL for FY07 a total of $396,000 for the following six SREL subtasks that directly support Soils and Groundwater Projects (SGP):

1. GIS-based Wildlife Literature Survey for Risk Assessments ($35,000)
2. Historic Research Sites ($35,000)
3. Herpetofauna for D-Area ($65,000)
4. Aquatic Biota for Fourmile Creek ($79,000)
5. Fish Studies - Tims Branch ($83,000)
6. Combined Mixed Waste Management Facility ($99,000)

The SREL FY07 Scope of Work (provided by Dennis Ryan, 11/28/06) is comprised of 35 subtasks (not including the subtasks listed above). John Knox and Brian Hennessey plan to complete an assessment of the 35 subtasks by December 4, 2006 (if not sooner) to determine direct applicability to SGP.

As we have discussed, a strong case can be made that each of the 35 subtasks are directly applicable to SGP, Waste Disposition Project (WDP), and Nuclear Materials Stabilization Project (NMSP), through DOE O 450.1, "Environment Protection Program", DOE G 450.1-10, "Senior Managers' Implementation Guide for Use with DOE O 450.1", and the SRS Environmental Management System (EMS) Policy. Specifically, the DOE O states the objective, "To implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources impacted by DOE operations and by which DOE cost effectively meets or exceeds compliance with applicable environmental ... regulations and Environmental Management Systems (EMS) at DOE sites" and DOE G 450.1-10, states, "The expected benefits of

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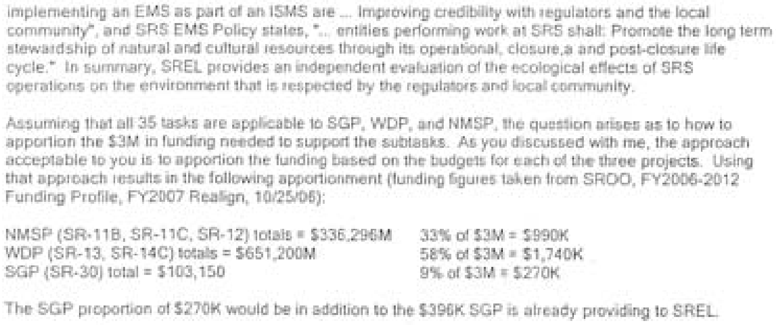

implementing an EMS as part of an ISMS are ... Improving credibility with regulators and the local community", and SRS EMS Policy states, "... entities performing work at SRS shall: Promote the long term stewardship of natural and cultural resources through its operational, closure,a and post-closure life cycle." In summary, SREL provides an independent evaluation of the ecological effects of SRS operations on the environment that is respected by the regulators and local community.

Assuming that all 35 tasks are applicable to SGP, WDP, and NMSP, the question arises as to how to apportion the $3M in funding needed to support the subtasks. As you discussed with me, the approach acceptable to you is to apportion the funding based on the budgets for each of the three projects. Using that approach results in the following apportionment (funding figures taken from SROO, FY2006-2012 Funding Profile, FY2007 Realign, 10/25/06):

NMSP (SR-11B, SR-11C, SR-12) totals = $336,296M	33% of $3M = $990K
WDP (SR-13, SR-14C) totals = $651,200M	58% of $3M = $1,740K
SGP (SR-30) total = $103,150	9% of $3M = $270K

The SGP proportion of $270K would be in addition to the $396K SGP is already providing to SREL.

Levitan, William

From: Fleshman, Justin
Sent: Wednesday, November 29, 2006 6:45 PM
To: Anderson, Charles E
Cc: Gilbertson, Mark; Levitan, William; Alchowiak, Justine; Hosaflook, Dennis; Ott, Karen; Cuevas, Steven; Allison, Jeffrey (SRS)
Subject: SREL

Charlie-
Here is our nightly SREL update. In a nutshell CI is not comfortable doing this tomorrow.

After the meeting last night with EM and CI, EM-20 sent the agreed upon changes to the agreement and 48hr notice to the site to make the changes and I sent revised talking points (and a paragraph) to Dirk and we agreed to go over them in detail today.

Today, after discussing with Dirk he was comfortable with the message to convey over the phone and was going to have some of the additional points in the back pocket as info for himself. Shortly after our conversation he discussed the matter with Jill where additional concerns were raised. Those being; a) how many tasks have been proposed and what is the makeup of DOE (EM specific number of tasks) and Non-DOE and what is the dollar amount for those groups, b) why is DOE not assigning tasks to SREL to complete, and c) when and how will the decision be made to approve or not approve the individual tasks.

EM-20 and I discussed these questions with SRS and obtained answers.

A) Info on tasks--
    a. 9 tasks totaling $3M are EM
    b. NNSA tasks total $500K (including the $350K already agreed to)
    c. Forest Service, DoD, and EPA tasks total $500K
B) Majority of tasks are ongoing tasks that DOE developed with UGA and the Cooperative Agreement sets a framework for SREL to provide independent evaluation of SRS activities.
C) EM tasks will be approved after thorough evaluation by SRS and EM-HQ

At the same time the site sent in the revised 48hr notice and pages of the cooperative agreement per the changes from last night.

CI then questioned if NNSA agreed to fund up to $500K and stated that NNSA HQ has told them that they are not set on the $350K. In addition, they wanted to know why the Non-DOE tasks were even discussed in the agreement, if the agreement is between UGA and DOE. Also, they do not believe that a budget numbers needs to be put in the agreement for the first fiscal year ($6M) and that the $4M figure for tasks should be taken out so that the hill can not complain later if SREL does not receive that entire amount during the year.

I offered the idea of not discussing the NNSA funds, as they are not specifically detailed in the agreement, at the present time so that NNSA could work that out and just discuss the EM $1M—per the Secretary's agreement. That did not go over well as it was then suggested that the agreement needs to have a third table (on page 4) that describes 'already approved tasks,' and that would be where the $350K would go.

Jill has requested a meeting at 10am tomorrow between EM, NNSA, and CI to hammer out the remaining issues. She wants NNSA to come to agreement its funding and to understand that this is not a task and they need to be able to justify any dollars spent at SREL with work (and EM). She also wants to understand why there is even mention of Non-DOE funds in the agreement and why there needs to be a budget for the first fiscal year (Dirk referenced that it was explained to him as a debit card and that did not go over well).

Please let me know if you have any questions.

Justin R. Fleshman
Office of Environmental Management
U.S. Department of Energy
P:202.586.2856
F:202.586.9100
C:202.701.8450

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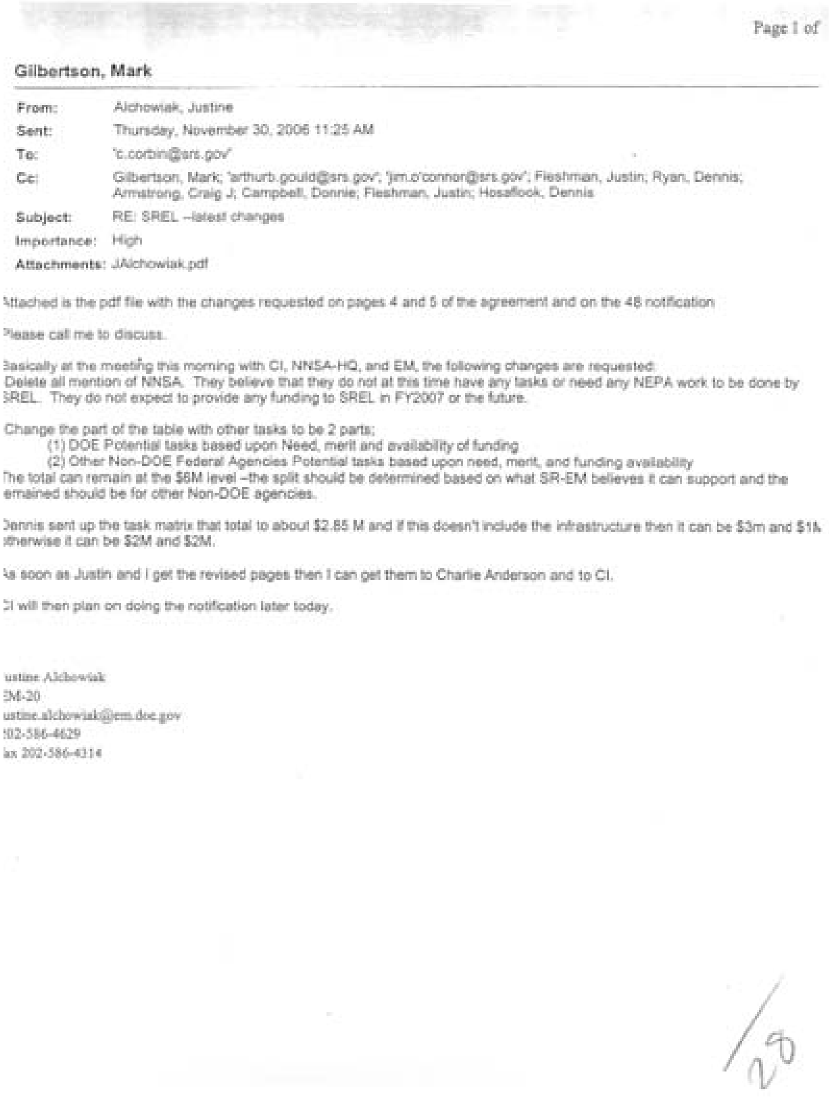

Page 1 of

Gilbertson, Mark

From: Alchowiak, Justine
Sent: Thursday, November 30, 2006 11:25 AM
To: 'c.corbin@srs.gov'
Cc: Gilbertson, Mark; 'arthurb.gould@srs.gov'; 'jim.o'connor@srs.gov'; Fleshman, Justin; Ryan, Dennis; Armstrong, Craig J; Campbell, Donnie; Fleshman, Justin; Hosaflook, Dennis
Subject: RE: SREL --latest changes
Importance: High
Attachments: JAlchowiak.pdf

ttached is the pdf file with the changes requested on pages 4 and 5 of the agreement and on the 48 notification

lease call me to discuss.

asically at the meeting this morning with CI, NNSA-HQ, and EM, the following changes are requested:
Delete all mention of NNSA. They believe that they do not at this time have any tasks or need any NEPA work to be done by REL. They do not expect to provide any funding to SREL in FY2007 or the future.

Change the part of the table with other tasks to be 2 parts;
(1) DOE Potential tasks based upon Need, merit and availability of funding
(2) Other Non-DOE Federal Agencies Potential tasks based upon need, merit, and funding availability
he total can remain at the $6M level –the split should be determined based on what SR-EM believes it can support and the emained should be for other Non-DOE agencies.

ennis sent up the task matrix that total to about $2.85 M and if this doesn't include the infrastructure then it can be $3m and $1
therwise it can be $2M and $2M.

s soon as Justin and I get the revised pages then I can get them to Charlie Anderson and to CI.

I will then plan on doing the notification later today.

ustine Alchowiak
M-20
ustine.alchowiak@em.doe.gov
02-586-4629
ax 202-586-4314

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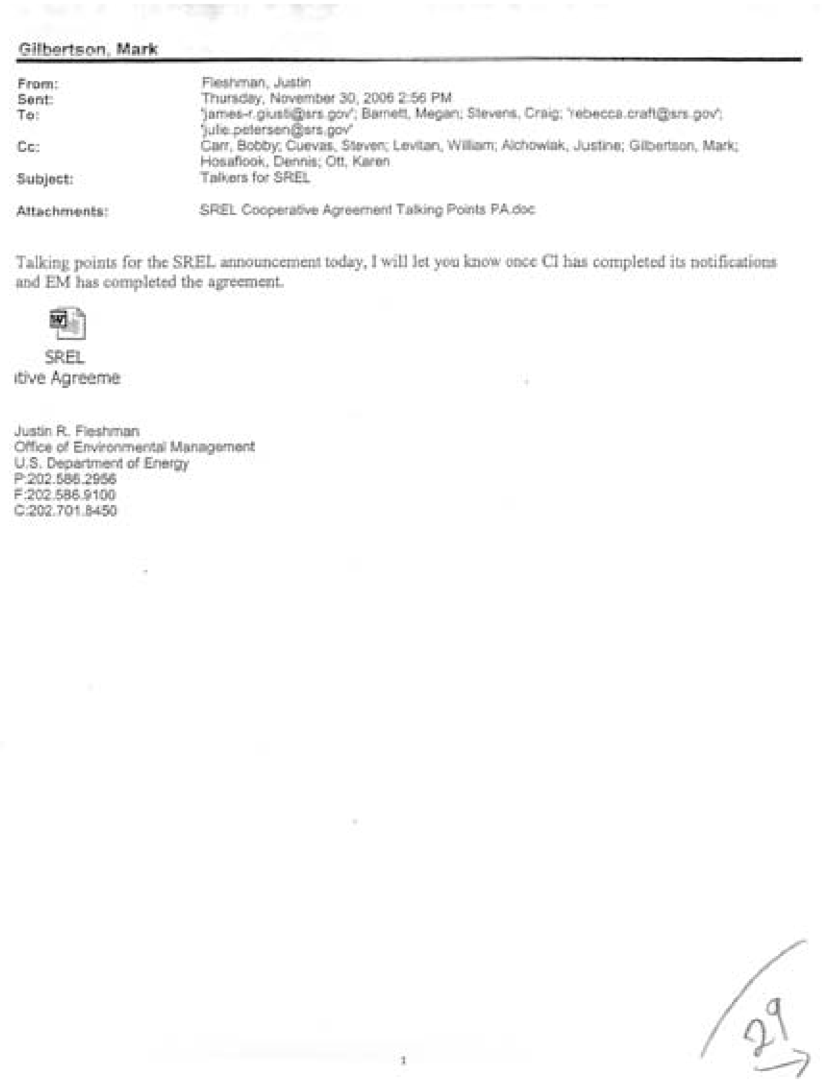


Gilbertson, Mark

From: Fleshman, Justin
Sent: Thursday, November 30, 2006 2:56 PM
To: 'james-r.giusti@srs.gov'; Barnett, Megan; Stevens, Craig; 'rebecca.craft@srs.gov'; 'julie.petersen@srs.gov'
Cc: Carr, Bobby; Cuevas, Steven; Levitan, William; Alchowiak, Justine; Gilbertson, Mark; Hosaflook, Dennis; Ott, Karen
Subject: Talkers for SREL

Attachments: SREL Cooperative Agreement Talking Points PA.doc

Talking points for the SREL announcement today, I will let you know once CI has completed its notifications and EM has completed the agreement.

SREL
itive Agreeme

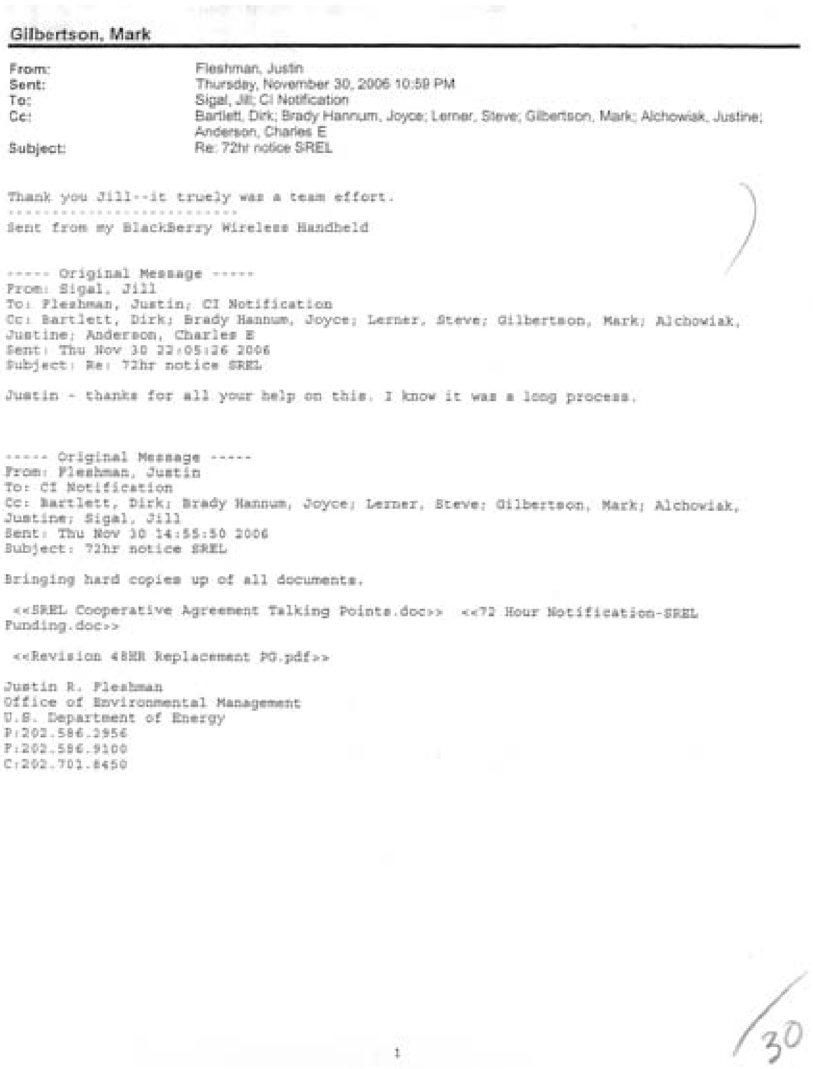
Justin R. Fleshman
Office of Environmental Management
U.S. Department of Energy
P:202.586.2956
F:202.586.9100
C:202.701.8450

29

1

SREL

- The Department of Energy will award the University of Georgia a new 5yr cooperative agreement to continue operations of the Savannah River Ecology Lab (SREL).
- For the first budget year (12/1/06-11/30/07), as Secretary Bodman committed to last year, EM will fund $1M to SREL for infrastructure costs.
- These funds will be coupled with UGA's cost sharing (per the agreement) of $1M.
- At the present time research tasks have been identified and pursant to Secretary Bodman's commitment these will be evaluated on a task by task basis. In addition, as agreed to last year the UGA has been encouraged to look beyond DOE for potential supporters of tasks.
- This agreement is structured to allow for Non-DOE tasks to be preformed at a DOE site.
- Currently, $3M of EM tasks have been identified (between UGA and SRS), additionally the UGA will market itself to Non-DOE (DoD, EPA, Forest Service, etc) for tasks. ---**THIS IS FOR INFORMATION ONLY, PLEASE DO NOT OFFER THIS DOLLAR FIGURE UNLESS ONE ASKS ABOUT WHAT IT IS.**
- For DOE tasks, the Savannah River Site, in conjunction with DOE-HQ, will approve or decline the tasks based on need, merit, and availability of funds, the decision of whether or not to approve the tasks will occur after the thorough evaluation of each task.
- The total value of the cooperative agreement over its 5yr life is TBD at this time, as the outyear budgets have not been set (see bullet above).



Gilbertson, Mark

From:	Fleshman, Justin
Sent:	Thursday, November 30, 2006 10:59 PM
To:	Sigal, Jill; CI Notification
Cc:	Bartlett, Dirk; Brady Hannum, Joyce; Lerner, Steve; Gilbertson, Mark; Alchowiak, Justine; Anderson, Charles E
Subject:	Re: 72hr notice SREL

Thank you Jill--it truely was a team effort.

Sent from my BlackBerry Wireless Handheld

----- Original Message -----
From: Sigal, Jill
To: Fleshman, Justin; CI Notification
Cc: Bartlett, Dirk; Brady Hannum, Joyce; Lerner, Steve; Gilbertson, Mark; Alchowiak, Justine; Anderson, Charles E
Sent: Thu Nov 30 22:05:26 2006
Subject: Re: 72hr notice SREL

Justin - thanks for all your help on this. I know it was a long process.

----- Original Message -----
From: Fleshman, Justin
To: CI Notification
Cc: Bartlett, Dirk; Brady Hannum, Joyce; Lerner, Steve; Gilbertson, Mark; Alchowiak, Justine; Sigal, Jill
Sent: Thu Nov 30 14:55:50 2006
Subject: 72hr notice SREL

Bringing hard copies up of all documents.

<<SREL Cooperative Agreement Talking Points.doc>> <<72 Hour Notification-SREL Funding.doc>>

<<Revision 48HR Replacement PO.pdf>>

Justin R. Fleshman
Office of Environmental Management
U.S. Department of Energy
P:202.586.2956
F:202.586.9100
C:202.701.8450

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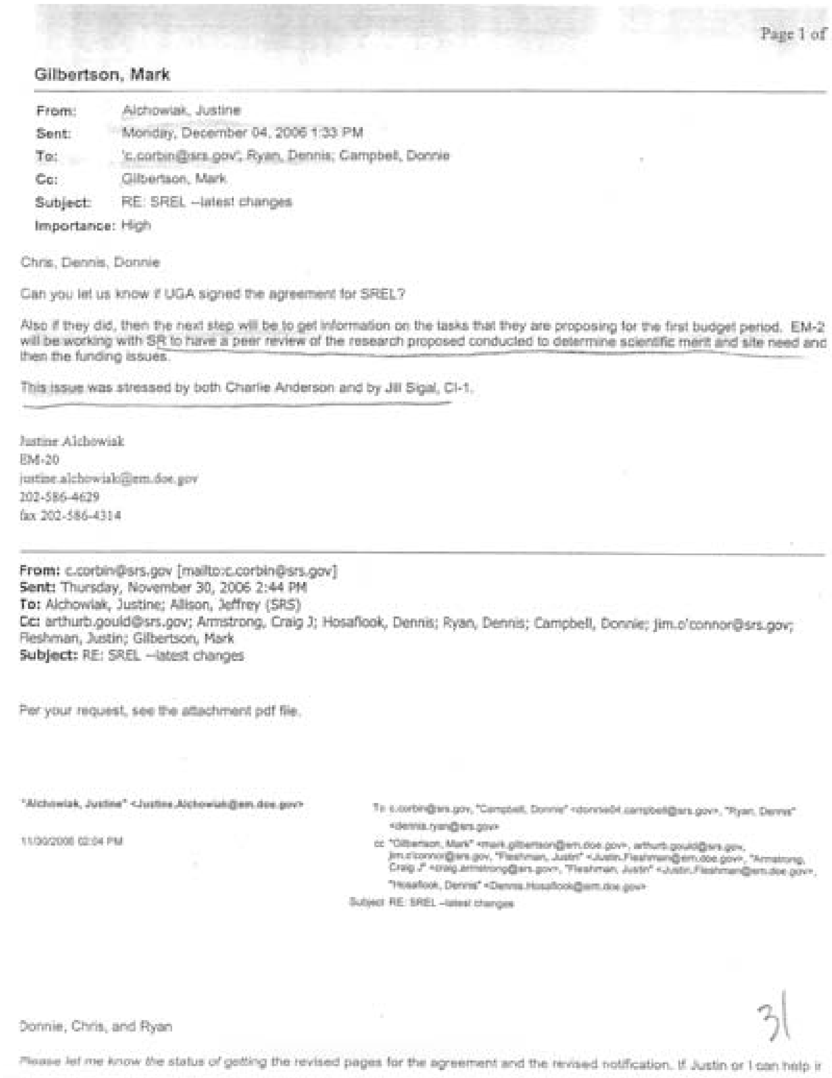

Page 1 of

Gilbertson, Mark

From: Alchowiak, Justine
Sent: Monday, December 04, 2006 1:33 PM
To: 'c.corbin@srs.gov'; Ryan, Dennis; Campbell, Donnie
Cc: Gilbertson, Mark
Subject: RE: SREL --latest changes
Importance: High

Chris, Dennis, Donnie

Can you let us know if UGA signed the agreement for SREL?

Also if they did, then the next step will be to get information on the tasks that they are proposing for the first budget period. EM-2 will be working with SR to have a peer review of the research proposed conducted to determine scientific merit and site need and then the funding issues.

This issue was stressed by both Charlie Anderson and by Jill Sigal, CI-1.

Justine Alchowiak
EM-20
justine.alchowiak@em.doe.gov
202-586-4629
fax 202-586-4314

From: c.corbin@srs.gov [mailto:c.corbin@srs.gov]
Sent: Thursday, November 30, 2006 2:44 PM
To: Alchowiak, Justine; Allison, Jeffrey (SRS)
Cc: arthurb.gould@srs.gov; Armstrong, Craig J; Hosaflook, Dennis; Ryan, Dennis; Campbell, Donnie; jim.o'connor@srs.gov; Fleshman, Justin; Gilbertson, Mark
Subject: RE: SREL --latest changes

Per your request, see the attachment pdf file.

"Alchowiak, Justine" <Justine.Alchowiak@em.doe.gov>

11/30/2006 02:04 PM

To c.corbin@srs.gov, "Campbell, Donnie" <donnie04.campbell@srs.gov>, "Ryan, Dennis" <dennis.ryan@srs.gov>

cc "Gilbertson, Mark" <mark.gilbertson@em.doe.gov>, arthurb.gould@srs.gov, jim.o'connor@srs.gov, "Fleshman, Justin" <Justin.Fleshman@em.doe.gov>, "Armstrong, Craig J" <craig.armstrong@srs.gov>, "Fleshman, Justin" <Justin.Fleshman@em.doe.gov>, "Hosaflook, Dennis" <Dennis.Hosaflook@em.doe.gov>

Subject RE: SREL --latest changes

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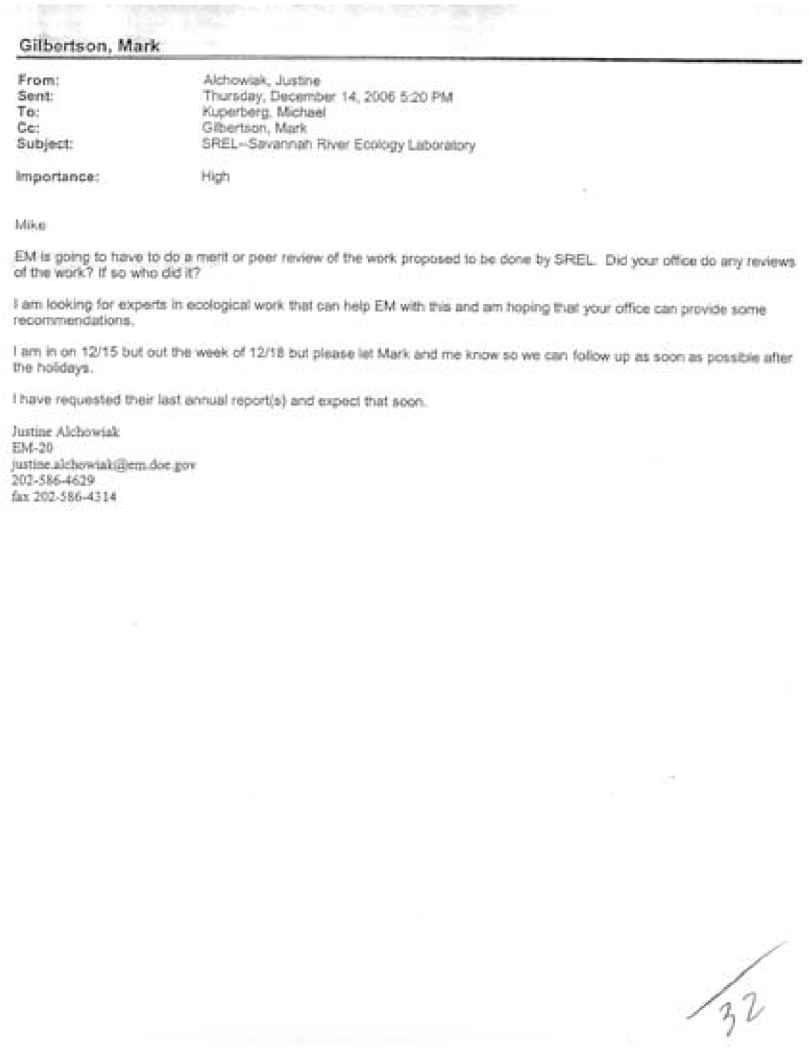
Donnie, Chris, and Ryan

Please let me know the status of getting the revised pages for the agreement and the revised notification. If Justin or I can help i



Gilbertson, Mark

From: Alchowiak, Justine
Sent: Thursday, December 14, 2006 5:20 PM
To: Kuperberg, Michael
Cc: Gilbertson, Mark
Subject: SREL--Savannah River Ecology Laboratory

Importance: High

Mike

EM is going to have to do a merit or peer review of the work proposed to be done by SREL. Did your office do any reviews of the work? If so who did it?

I am looking for experts in ecological work that can help EM with this and am hoping that your office can provide some recommendations.

I am in on 12/15 but out the week of 12/18 but please let Mark and me know so we can follow up as soon as possible after the holidays.

I have requested their last annual report(s) and expect that soon.

Justine Alchowiak
EM-20
justine.alchowiak@em.doe.gov
202-586-4629
fax 202-586-4314

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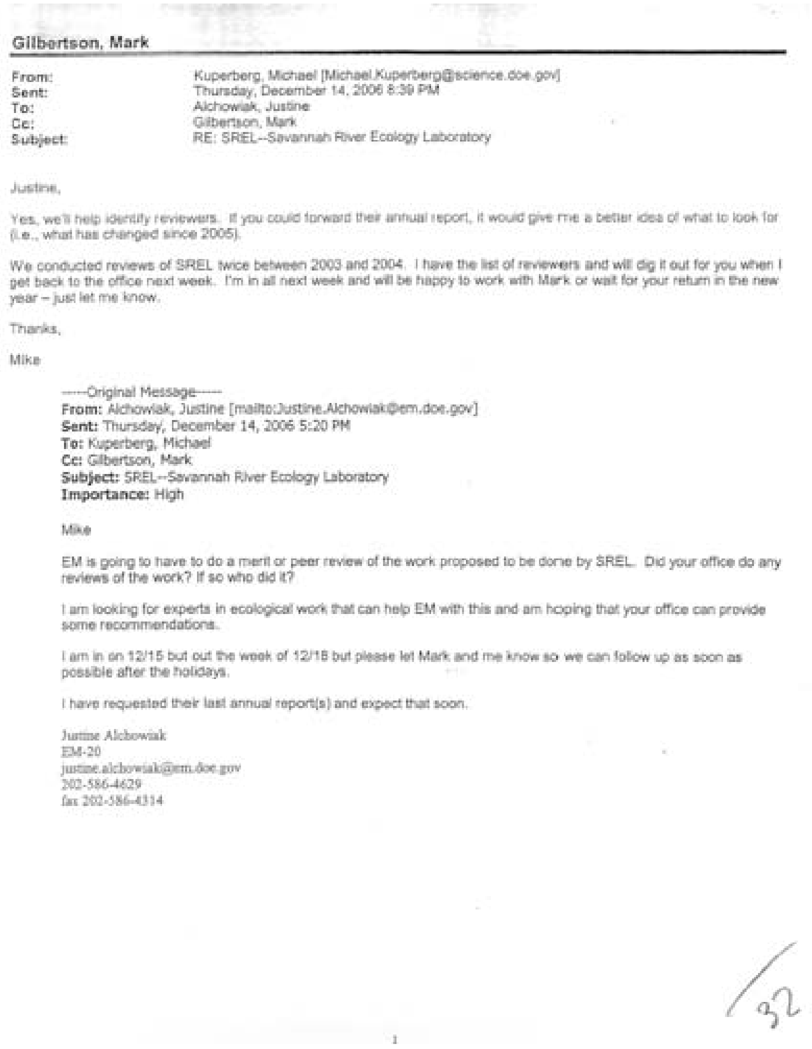

Gilbertson, Mark

From: Kuperberg, Michael [Michael.Kuperberg@science.doe.gov]
Sent: Thursday, December 14, 2006 6:39 PM
To: Alchowiak, Justine
Cc: Gilbertson, Mark
Subject: RE: SREL--Savannah River Ecology Laboratory

Justine,

Yes, we'll help identify reviewers. If you could forward their annual report, it would give me a better idea of what to look for (i.e., what has changed since 2005).

We conducted reviews of SREL twice between 2003 and 2004. I have the list of reviewers and will dig it out for you when I get back to the office next week. I'm in all next week and will be happy to work with Mark or wait for your return in the new year – just let me know.

Thanks,

Mike

> -----Original Message-----
> **From:** Alchowiak, Justine [mailto:Justine.Alchowiak@em.doe.gov]
> **Sent:** Thursday, December 14, 2006 5:20 PM
> **To:** Kuperberg, Michael
> **Cc:** Gilbertson, Mark
> **Subject:** SREL--Savannah River Ecology Laboratory
> **Importance:** High
>
> Mike
>
> EM is going to have to do a merit or peer review of the work proposed to be done by SREL. Did your office do any reviews of the work? If so who did it?
>
> I am looking for experts in ecological work that can help EM with this and am hoping that your office can provide some recommendations.
>
> I am in on 12/15 but out the week of 12/18 but please let Mark and me know so we can follow up as soon as possible after the holidays.
>
> I have requested their last annual report(s) and expect that soon.
>
> Justine Alchowiak
> EM-20
> justine.alchowiak@em.doe.gov
> 202-586-4629
> fax 202-586-4314

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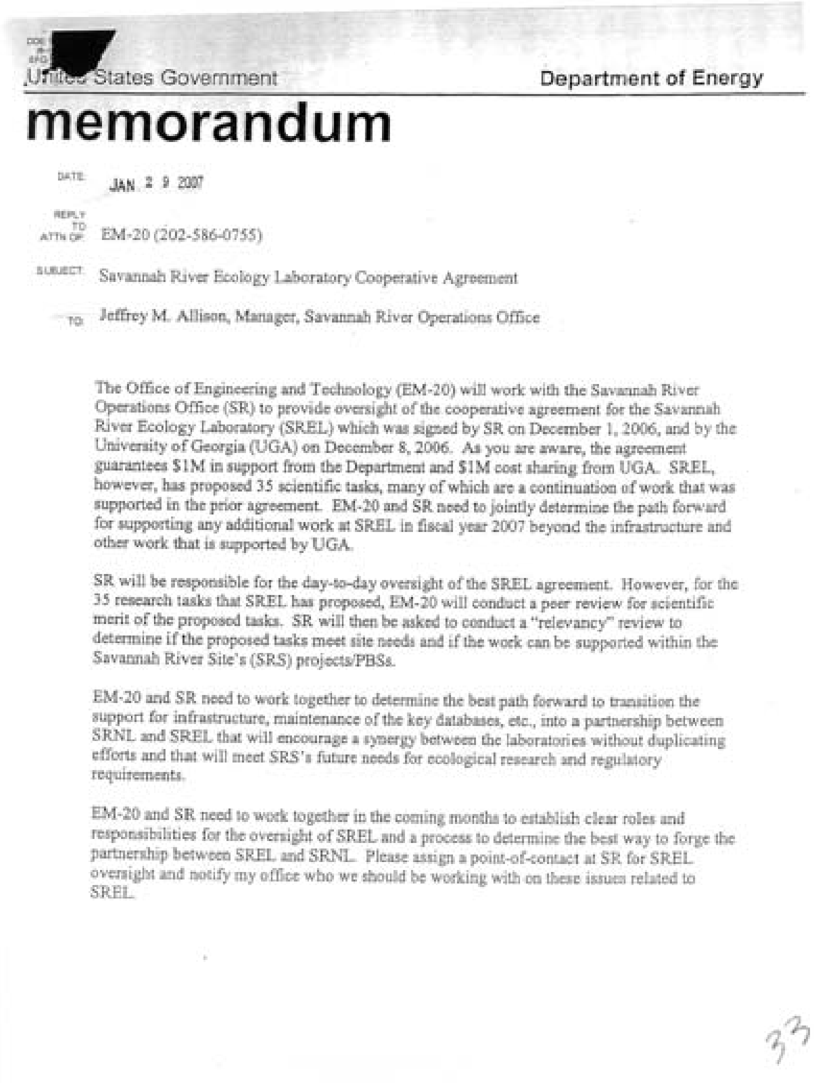

[redacted]

Un[redacted] States Government **Department of Energy**

memorandum

DATE: JAN 2 9 2007

REPLY TO ATTN OF: EM-20 (202-586-0755)

SUBJECT: Savannah River Ecology Laboratory Cooperative Agreement

TO: Jeffrey M. Allison, Manager, Savannah River Operations Office

The Office of Engineering and Technology (EM-20) will work with the Savannah River Operations Office (SR) to provide oversight of the cooperative agreement for the Savannah River Ecology Laboratory (SREL) which was signed by SR on December 1, 2006, and by the University of Georgia (UGA) on December 8, 2006. As you are aware, the agreement guarantees $1M in support from the Department and $1M cost sharing from UGA. SREL, however, has proposed 35 scientific tasks, many of which are a continuation of work that was supported in the prior agreement. EM-20 and SR need to jointly determine the path forward for supporting any additional work at SREL in fiscal year 2007 beyond the infrastructure and other work that is supported by UGA.

SR will be responsible for the day-to-day oversight of the SREL agreement. However, for the 35 research tasks that SREL has proposed, EM-20 will conduct a peer review for scientific merit of the proposed tasks. SR will then be asked to conduct a "relevancy" review to determine if the proposed tasks meet site needs and if the work can be supported within the Savannah River Site's (SRS) projects/PBSs.

EM-20 and SR need to work together to determine the best path forward to transition the support for infrastructure, maintenance of the key databases, etc., into a partnership between SRNL and SREL that will encourage a synergy between the laboratories without duplicating efforts and that will meet SRS's future needs for ecological research and regulatory requirements.

EM-20 and SR need to work together in the coming months to establish clear roles and responsibilities for the oversight of SREL and a process to determine the best way to forge the partnership between SREL and SRNL. Please assign a point-of-contact at SR for SREL oversight and notify my office who we should be working with on these issues related to SREL.

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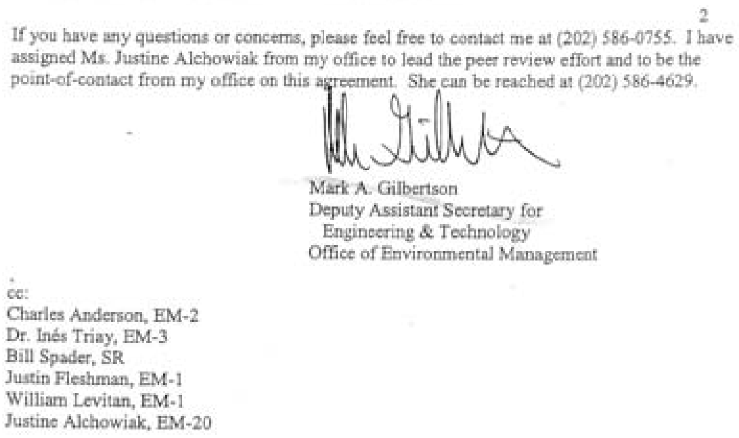
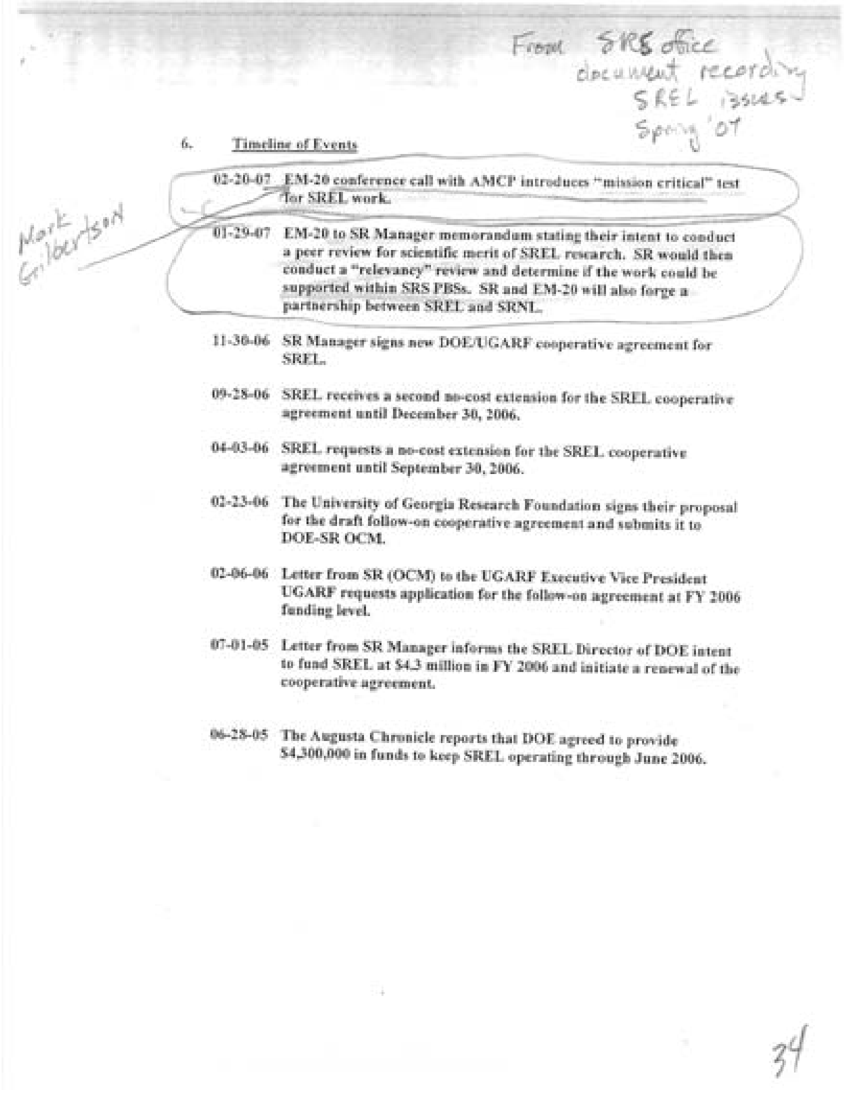


If you have any questions or concerns, please feel free to contact me at (202) 586-0755. I have assigned Ms. Justine Alchowiak from my office to lead the peer review effort and to be the point-of-contact from my office on this agreement. She can be reached at (202) 586-4629.

Mark A. Gilbertson
Deputy Assistant Secretary for
Engineering & Technology
Office of Environmental Management

cc:
Charles Anderson, EM-2
Dr. Inés Triay, EM-3
Bill Spader, SR
Justin Fleshman, EM-1
William Levitan, EM-1
Justine Alchowiak, EM-20



From SRS office
document recording
SREL issues
Spring '07

6. **Timeline of Events**

Mark Gilbertson

02-20-07	EM-20 conference call with AMCP introduces "mission critical" test for SREL work.
01-29-07	EM-20 to SR Manager memorandum stating their intent to conduct a peer review for scientific merit of SREL research. SR would then conduct a "relevancy" review and determine if the work could be supported within SRS PBSs. SR and EM-20 will also forge a partnership between SREL and SRNL.
11-30-06	SR Manager signs new DOE/UGARF cooperative agreement for SREL.
09-28-06	SREL receives a second no-cost extension for the SREL cooperative agreement until December 30, 2006.
04-03-06	SREL requests a no-cost extension for the SREL cooperative agreement until September 30, 2006.
02-23-06	The University of Georgia Research Foundation signs their proposal for the draft follow-on cooperative agreement and submits it to DOE-SR OCM.
02-06-06	Letter from SR (OCM) to the UGARF Executive Vice President UGARF requests application for the follow-on agreement at FY 2006 funding level.
07-01-05	Letter from SR Manager informs the SREL Director of DOE intent to fund SREL at $4.3 million in FY 2006 and initiate a renewal of the cooperative agreement.
06-28-05	The Augusta Chronicle reports that DOE agreed to provide $4,300,000 in funds to keep SREL operating through June 2006.

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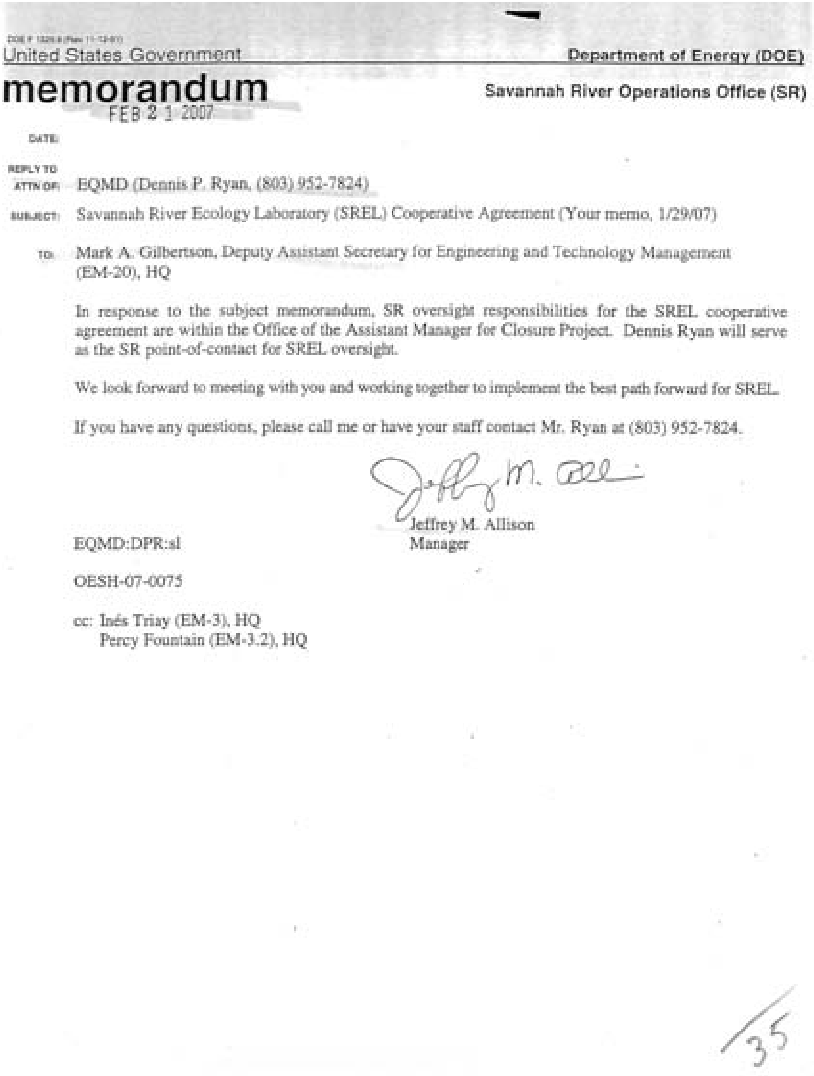


United States Government

Department of Energy (DOE)

memorandum

Savannah River Operations Office (SR)

DATE: FEB 2 1 2007

REPLY TO ATTN OF: EQMD (Dennis P. Ryan, (803) 952-7824)

SUBJECT: Savannah River Ecology Laboratory (SREL) Cooperative Agreement (Your memo, 1/29/07)

TO: Mark A. Gilbertson, Deputy Assistant Secretary for Engineering and Technology Management (EM-20), HQ

In response to the subject memorandum, SR oversight responsibilities for the SREL cooperative agreement are within the Office of the Assistant Manager for Closure Project. Dennis Ryan will serve as the SR point-of-contact for SREL oversight.

We look forward to meeting with you and working together to implement the best path forward for SREL.

If you have any questions, please call me or have your staff contact Mr. Ryan at (803) 952-7824.

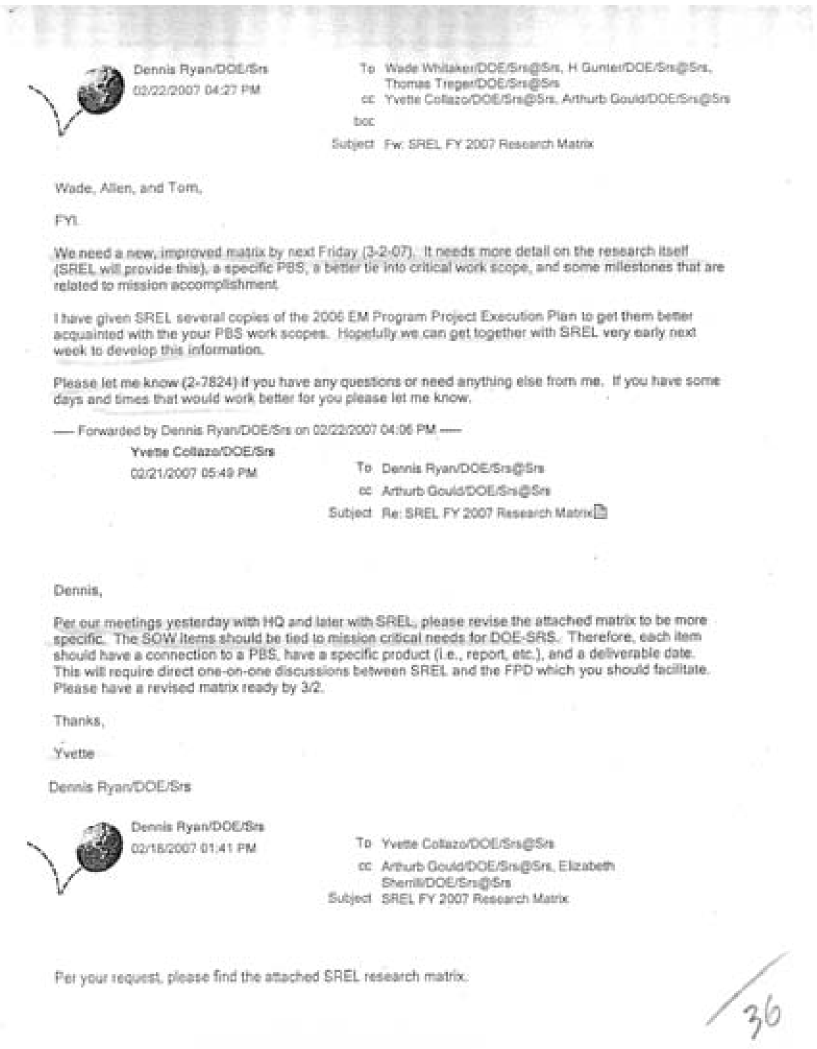
Jeffrey M. Allison
Manager

EQMD:DPR:sl

OESH-07-0075

cc: Inés Triay (EM-3), HQ
Percy Fountain (EM-3.2), HQ

35



Dennis Ryan/DOE/Srs
02/22/2007 04:27 PM

To Wade Whitaker/DOE/Srs@Srs, H Gunter/DOE/Srs@Srs, Thomas Treger/DOE/Srs@Srs
cc Yvette Collazo/DOE/Srs@Srs, Arthurb Gould/DOE/Srs@Srs
bcc
Subject Fw: SREL FY 2007 Research Matrix

Wade, Allen, and Tom,

FYI.

We need a new, improved matrix by next Friday (3-2-07). It needs more detail on the research itself (SREL will provide this), a specific PBS, a better tie into critical work scope, and some milestones that are related to mission accomplishment.

I have given SREL several copies of the 2006 EM Program Project Execution Plan to get them better acquainted with the your PBS work scopes. Hopefully we can get together with SREL very early next week to develop this information.

Please let me know (2-7824) if you have any questions or need anything else from me. If you have some days and times that would work better for you please let me know.

----- Forwarded by Dennis Ryan/DOE/Srs on 02/22/2007 04:06 PM -----

Yvette Collazo/DOE/Srs
02/21/2007 05:49 PM

To Dennis Ryan/DOE/Srs@Srs
cc Arthurb Gould/DOE/Srs@Srs
Subject Re: SREL FY 2007 Research Matrix

Dennis,

Per our meetings yesterday with HQ and later with SREL, please revise the attached matrix to be more specific. The SOW items should be tied to mission critical needs for DOE-SRS. Therefore, each item should have a connection to a PBS, have a specific product (i.e., report, etc.), and a deliverable date. This will require direct one-on-one discussions between SREL and the FPD which you should facilitate. Please have a revised matrix ready by 3/2.

Thanks,

Yvette

Dennis Ryan/DOE/Srs

Dennis Ryan/DOE/Srs
02/16/2007 01:41 PM

To Yvette Collazo/DOE/Srs@Srs
cc Arthurb Gould/DOE/Srs@Srs, Elizabeth Sherrill/DOE/Srs@Srs
Subject SREL FY 2007 Research Matrix

Per your request, please find the attached SREL research matrix.

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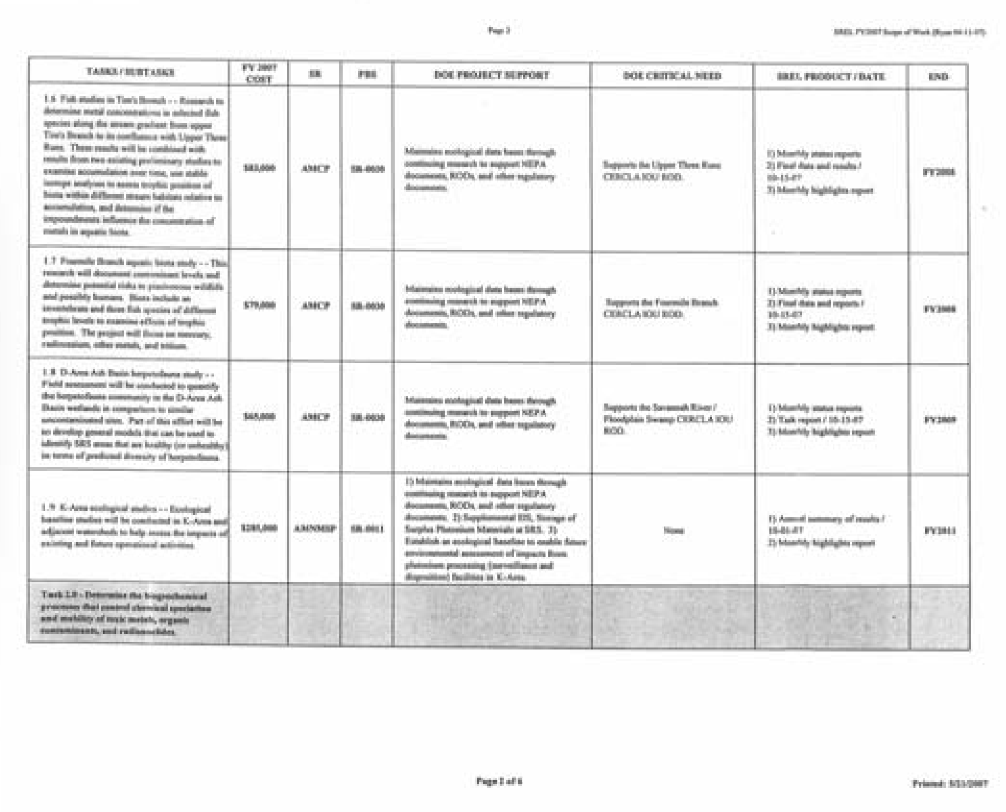
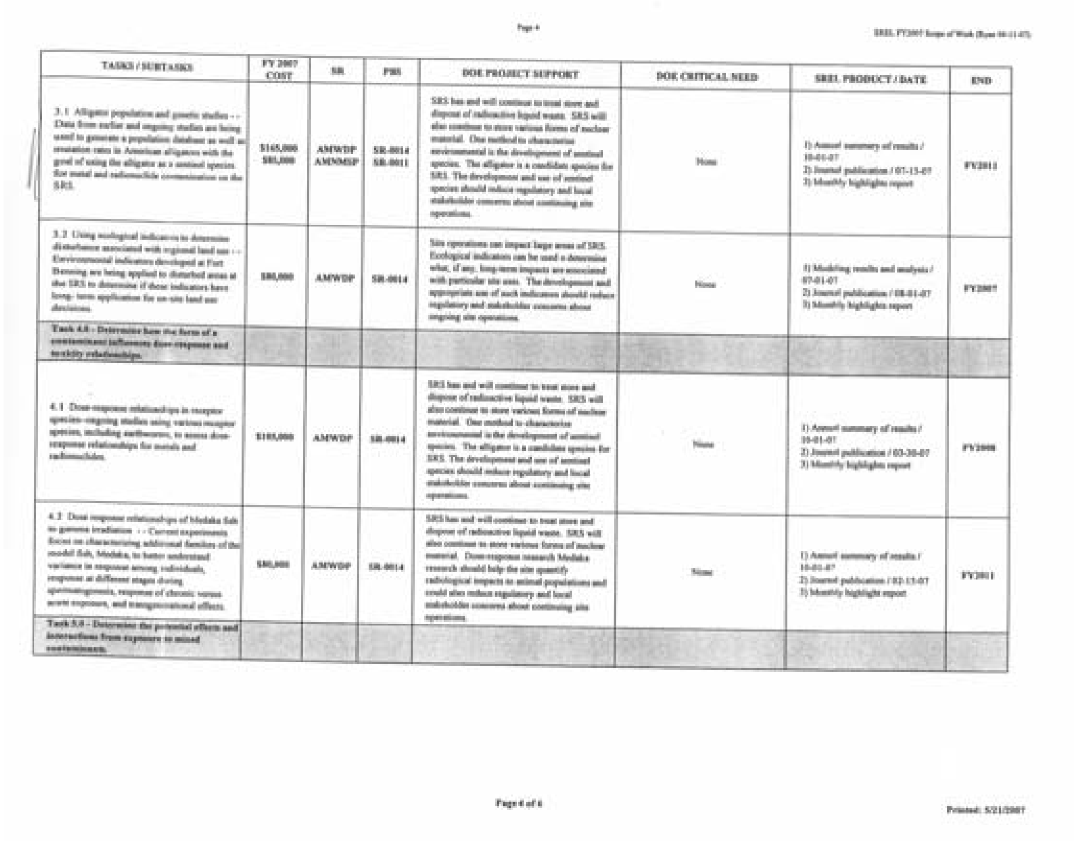
TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
Task 1.0 - Develop long-term ecological databases for use in Site documents and to determine whether any changes being observed are the result of natural fluctuations or operational impacts.							
1.1 Studies of the microbial communities of contaminated and uncontaminated streams - - Research to determine if bacterial exposure to metals will result in bacteria with increased resistance to both metals and antibiotics.	$270,000	AMNMSP	SR-0011	1) Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents. 2) Supplemental Analysis, Highly Enriched Uranium and Spent Fuel Management. 3) Supplemental EIS, Plutonium Disposition at SRS. 4) Programmatic EIS for the Global Nuclear Energy Partnership (GNEP).	None	1) Annual summary of results / 10-01-07 2) Journal publication / 06-30-07 3) Monthly highlights report	FY2008
1.2 Carolina bay restoration studies - - Research to characterize baseline hydrologic conditions in these wetlands and assess vegetation changes as a baseline for evaluating wetland restoration success.	$95,000	AMCP	SR-0030	1) Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents. 2) Supports SRS Wetlands Mitigation Bank that would support cost avoidance for selected cleanup projects.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 09-30-07 3) Monthly highlights report	FY2008
1.3 Sand Hills threatened, endangered, or sensitive (TES) species population studies - - Help determine if the management of red-cockaded woodpecker habitat at SRS adversely impacts (or benefits) other threatened, endangered and sensitive Sand Hills plant species.	$90,000	AMWDP	SR-0014	1) Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents. 2) EA for the Tank Closure at SRS. 3) EA for Closure Alternatives for Stormwater Outfalls at SRS.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 10-01-07 3) Monthly highlights report	FY2008
1.4 SRS GIS wildlife survey data base - - Review SREL and USFS-SR publications, reports, theses, and dissertations generated and assemble records for vertebrate species and site locations for 77 receptor species. This information is used for SRS risk assessments and in communicating with regulators.	$30,000	AMCP	SR-0030	Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports preparation of all CERCLA OU and IOU risk assessments and RODs.	1) Semi-annual update of data / 01-15-07 2) Semi-annual update of data / 07-15-07 3) Monthly highlights report	FY2011
1.5 SRS GIS historic research sites - - Create a new GIS coverage of historic research sites to be used when conducting ecological and health risk assessments as well as evaluating site remediation efforts, siting new facilities, or locating clean reference sites.	$35,000	AMCP	SR-0030	Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports preparation of all CERCLA OU and IOU risk assessments and RODs.	1) Monthly status reports 2) New GIS data layer / 10/30/07 3) Monthly highlights report	FY2011



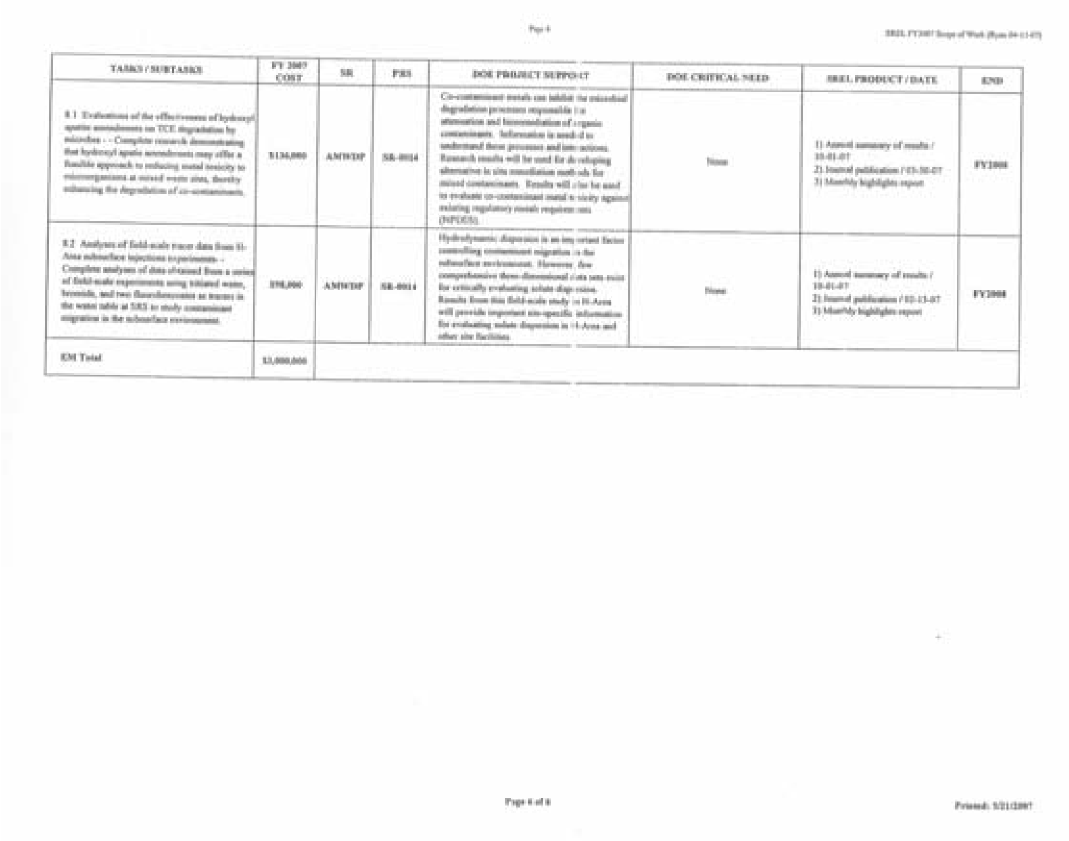
TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
1.6 Fish studies in Tim's Branch - - Research to determine metal concentrations in selected fish species along the stream gradient from upper Tim's Branch to its confluence with Upper Three Runs. These results will be combined with results from two existing preliminary studies to examine accumulation over time, use stable isotope analyses to assess trophic position of biota within different stream habitats relative to accumulation, and determine if the impoundments influence the concentration of metals in aquatic biota.	$83,000	AMCP	SR-0030	Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Upper Three Runs CERCLA IOU ROD.	1) Monthly status reports 2) Final data and results / 10-15-07 3) Monthly highlights report	FY2008
1.7 Fourmile Branch aquatic biota study - - This research will document contaminant levels and determine potential risks to piscivorous wildlife and possibly humans. Biota include an invertebrate and three fish species of different trophic levels to examine effects of trophic position. The project will focus on mercury, radiocesium, other metals, and tritium.	$79,000	AMCP	SR-0030	Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Fourmile Branch CERCLA IOU ROD.	1) Monthly status reports 2) Final data and reports / 10-15-07 3) Monthly highlights report	FY2008
1.8 D-Area Ash Basin herpetofauna study - - Field assessment will be conducted to quantify the herpetofauna community in the D-Area Ash Basin wetlands in comparison to similar uncontaminated sites. Part of this effort will be to develop general models that can be used to identify SRS areas that are healthy (or unhealthy) in terms of predicted diversity of herpetofauna.	$65,000	AMCP	SR-0030	Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Savannah River / Floodplain Swamp CERCLA IOU ROD.	1) Monthly status reports 2) Task report / 10-15-07 3) Monthly highlights report	FY2009
1.9 K-Area ecological studies - - Ecological baseline studies will be conducted in K-Area and adjacent watersheds to help assess the impacts of existing and future operational activities.	$285,000	AMNMSP	SR-0011	1) Maintains ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents. 2) Supplemental EIS, Storage of Surplus Plutonium Materials at SRS. 3) Establish an ecological baseline to enable future environmental assessment of impacts from plutonium processing (surveillance and disposition) facilities in K-Area.	None	1) Annual summary of results / 10-01-07 2) Monthly highlights report	FY2011
Task 2.0 - Determine the biogeochemical processes that control chemical speciation and mobility of toxic metals, organic contaminants, and radionuclides.							

TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
2.1 Uranium and nickel speciation in the Steed Pond — Tims Branch system - - Research to understand the biogeochemical processes that control the mobility of heavy metals to help create realistic estimates of human health and ecological risks and prudent remediation and management decisions for contaminated lands.	$75,000 $205,000	AMNMSP AMWDP	SR-0011 SR-0014	1) Operations at SRS have resulted in the release of heavy metal ions, including transition metals, metalloids, and actinides into the site environment. Research is needed to determine the biochemical processes that control chemical form and mobility. This information should provide a basis for more accurate risk assessments and improved remediation methods and should reduce regulatory and local stakeholder concerns about continuing site operations. 2) Supports the Upper Three Runs CERCLA IOU ROD.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 07-01-07 3) Monthly highlights report	FY2008
2.2 Natural attenuation of PCE/TCE in Pen Branch hyporheic sediments - Research to study the role of monitored natural attenuation (MNA) processes within the hyporheic zone in mitigating the flux of PCE, TCE, and CT from the Chemicals, Metals, and Pesticide (CMP) groundwater plume into Pen Branch Creek.	$85,000	AMCP	SR-0030	1) Refinement of current natural remedial process remedies and the development of these remedies for non-organic (metals, radionuclides) contaminants is needed to enable timely regulatory approvals and the earlier shutdown of major groundwater cleanup facilities. 2) CMP Pits Post-ROD operation and maintenance and CERCLA IOU ROD.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 10-01-07 3) Monthly highlights reports	FY2009
2.3 Development of compound-specific isotope ratio analysis - - Research to identify the primary carbon processing pathways used by microorganisms in Pen Branch sediments to provide insights into the biogeochemical parameters controlling the degradation rates of PCE and TCE in this system. Examine nitrogen sources and protein turnover in natural and impacted environments.	$85,000	AMCP	SR-0030	1) Scientific and policy support is needed to facilitate implementation of passive cleanup and cost-effective monitoring strategies leading to responsible completion of active remediation activities at SRS. 2) CMP Pits Post-ROD operation and maintenance and CERCLA IOU ROD.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 09-01-07 3) Monthly highlights report	FY2008
2.4 Application of surface complexation models to descriptions of contaminant migration in the vadose zone - - To support in situ remediation approaches, a series of batch and column studies are evaluating the ability to enhance contaminant metal reduction within highly weathered soils and aquifer sediments with special emphasis on nutrient amendments.	$155,000	AMWDP	SR-0014	In situ reduction may be an effective means of remediating groundwater systems contaminated with redox sensitive contaminants such as U and Cr. However, before this approach (nutrient amendments) can be employed, additional data are needed to address uncertainties about varying mineralogy and the possibility of enhanced contaminant migration. The refinement of contaminant migration models and less expensive and less impactive remediation methods should reduce regulatory and stakeholder concerns about continuing site operations and cleanup strategies.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 05-01-07 3) Monthly highlights report	FY2009
Task 3.0 - Assess whether sentinel species or other sensors can be used to characterize environmental health.							



TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
3.1 Alligator population and genetic studies - - Data from earlier and ongoing studies are being used to generate a population database as well as mutation rates in American alligators with the goal of using the alligator as a sentinel species for metal and radionuclide contamination on the SRS.	$165,000 $81,000	AMWDP AMNMSP	SR-0014 SR-0011	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. One method to characterize environmental is the development of sentinel species. The alligator is a candidate species for SRS. The development and use of sentinel species should reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 07-15-07 3) Monthly highlights report	FY2011
3.2 Using ecological indicators to determine disturbance associated with regional land use - - Environmental indicators developed at Fort Benning are being applied to disturbed areas at the SRS to determine if these indicators have long- term application for on-site land use decisions.	$80,000	AMWDP	SR-0014	Site operations can impact large areas of SRS. Ecological indicators can be used a determine what, if any, long-term impacts are associated with particular site uses. The development and appropriate use of such indicators should reduce regulatory and stakeholder concerns about ongoing site operations.	None	1) Modeling results and analysis / 07-01-07 2) Journal publication / 08-01-07 3) Monthly highlights report	FY2007
Task 4.0 - Determine how the form of a contaminant influences dose-response and toxicity relationships.							
4.1 Dose-response relationships in receptor species- ongoing studies using various receptor species, including earthworms, to assess dose-response relationships for metals and radionuclides.	$185,000	AMWDP	SR-0014	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. One method to characterize environmental is the development of sentinel species. The alligator is a candidate species for SRS. The development and use of sentinel species should reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 03-30-07 3) Monthly highlights report	FY2008
4.2 Dose response relationships of Medaka fish to gamma irradiation - - Current experiments focus on characterizing additional families of the model fish, Medaka, to better understand variance in response among individuals, responses at different stages during spermatogenesis, response of chronic versus acute exposure, and transgenerational effects.	$80,000	AMWDP	SR-0014	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. Dose-response research Medaka research should help the site quantify radiological impacts to animal populations and could also reduce regulatory and local stakeholder concerns about continuing site operations.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 02-15-07 3) Monthly highlight report	FY2011
Task 5.0 - Determine the potential effects and interactions from exposure to mixed contaminants.							

TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
5.1 Studies of the interaction of nickel and TCE in plants in the Steed Pond — Tims Branch ecosystem - - Research will focus on the effects of less toxic doses of nickel to hybrid poplar plants to determine effects on the formation of metabolites in the leaves and roots of the plants.	$90,000	AMCP	SR-0030	1) Data on natural remediation processes and the application of these processes for non-organic (metals, radionuclides) contaminants are needed to enable public acceptance, timely regulatory approvals, and an earlier shutdown of major groundwater cleanup facilities. 2) Supports the Upper Three Runs CERCLA IOU ROD.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 02-01-07 3) Monthly highlights report	FY2009
Task 6.0 - Define more clearly the risks from low dose-rate, chronic exposures to radiation.							
6.1 Effects of low-dose rate ionizing radiation- Radiation effect studies using site amphibian species as model organisms to determine their radiosensitivity during egg development, larval period, and metamorphic period will continue as part of an effort to establish data for potential radiation protection guidelines for natural populations.	$295,000 125,000	AMWDP AMNMSP	SR-0014 SR-0011	SRS has and will continue to treat store and dispose of radioactive liquid waste. SRS will also continue to store various forms of nuclear material. The study of low-dose rate radiation effects on wildlife populations should reduce regulatory and local stakeholder concerns about continuing site operations including the Saltstone Facility, K-Area plutonium storage and disposition, and the proposed GNEP.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 03-01-07 3) Monthly highlights report	FY2011
Task 7.0 Identify the traits of native species and populations that best determine their suitability for use in remediation and restoration.							
7.1 Evaluation of native plants most successful in the restoration of Carolina bays - - To complete research analyses on the final two years of this five- year study that suggests that passive revegetation can be a successful strategy for these wetlands.	$91,000	AMWDP	SR-0014	Site operations can affect wetland areas of the site. The research and development of cost effective wetland restoration techniques can be used to repair wetland damage caused by past and existing site operations. Proven restoration techniques could also have application in future clean up efforts.	None	1) Final data and analysis / 09-01-07 2) Journal publication / 10-01-07 3) Monthly highlights report	FY2007
7.2 Mixed Waste Management Facility (MWMF) remediation - - A cooperative effort with USFS-SR and SGCP to assist with site waste management and provide the evapo-transpiration efficiency estimates required for the Corrective Action Report (CAR).	$99,000	AMCP	SR-0030	1) Maintain ecological data bases through continuing research to support NEPA documents, RODs, and other regulatory documents.	Supports the Mixed Waste Management Facility CAR.	1) Annual summary of results / 10-01-07 2) Evapo-transpiration efficiency estimates / 02-15-07 3) Monthly highlights report	FY2011
Task 8.0 Determine the primary mechanisms by which natural attenuation and engineered remediation processes immobilize contaminants, and identify the appropriate geochemical and biological endpoints to assess sustainability.							



TASKS / SUBTASKS	FY 2007 COST	SR	PBS	DOE PROJECT SUPPORT	DOE CRITICAL NEED	SREL PRODUCT / DATE	END
8.1 Evaluations of the effectiveness of hydroxyl apatite amendments on TCE degradation by microbes - - Complete research demonstrating that hydroxyl apatite amendments may offer a feasible approach to reducing metal toxicity to microorganisms at mixed waste sites, thereby enhancing the degradation of co-contaminants.	$134,000	AMWDP	SR-0014	Co-contaminant metals can inhibit the microbial degradation processes responsible for attenuation and bioremediation of organic contaminants. Information is needed to understand these processes and interactions. Research results will be used for developing alternative in situ remediation methods for mixed contaminants. Results will also be used to evaluate co-contaminant metal toxicity against existing regulatory metals requirements (NPDES).	None	1) Annual summary of results / 10-01-07 2) Journal publication / 03-30-07 3) Monthly highlights report	FY2008
8.2 Analyses of field-scale tracer data from H-Area subsurface injections experiments - - Complete analyses of data obtained from a series of field-scale experiments using tritiated water, bromide, and two fluorobenzoates as tracers in the water table at SRS to study contaminant migration in the subsurface environment.	$98,000	AMWDP	SR-0014	Hydrodynamic dispersion is an important factor controlling contaminant migration in the subsurface environment. However, few comprehensive three-dimensional data sets exist for critically evaluating solute dispersion. Results from this field-scale study in H-Area will provide important site-specific information for evaluating solute dispersion in H-Area and other site facilities.	None	1) Annual summary of results / 10-01-07 2) Journal publication / 03-15-07 3) Monthly highlights report	FY2008
EM Total	$3,000,000						

From SRS office

"MISSION CRITICAL"

I am not aware of a consensus definition of "mission critical."

- If it means that each research effort must support a specific short-term regulatory requirement for a specific project, few SREL projects pass this test. I have identified only the six AMCP projects that were directly funded (from WSRC de-obligations) that meet this test (i.e., 1.4, 1.5, 1.6, 1.7, 1.8, and 7.2).
- If it means that the research and possible development of site sentinel species for metal and radionuclide contamination is, indeed, mission critical then many more of the proposed tasks would meet the test.
- Broader still, if it were deemed mission critical to provide DOE and the public an independent evaluation of the environmental impacts of site operations, all of the SREL tasks would meet the test.

DPR
03-19-07

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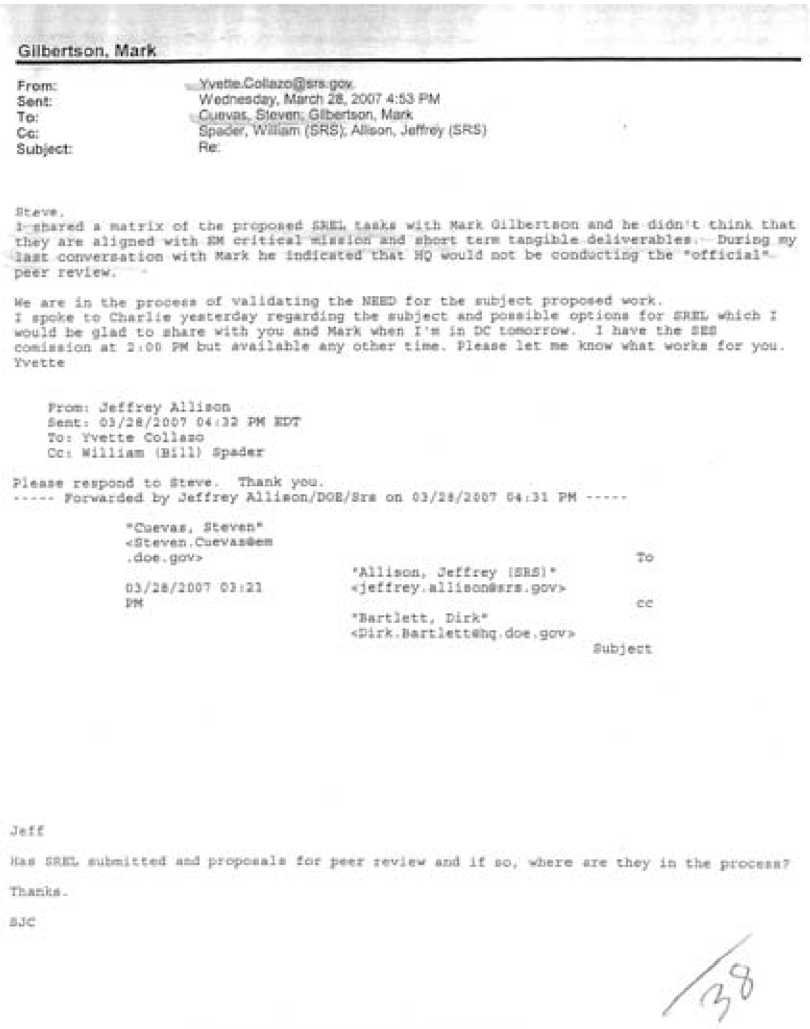

Gilbertson, Mark

From: Yvette.Collazo@srs.gov
Sent: Wednesday, March 28, 2007 4:53 PM
To: Cuevas, Steven; Gilbertson, Mark
Cc: Spader, William (SRS); Allison, Jeffrey (SRS)
Subject: Re:

Steve,
I shared a matrix of the proposed SREL tasks with Mark Gilbertson and he didn't think that they are aligned with EM critical mission and short term tangible deliverables. During my last conversation with Mark he indicated that HQ would not be conducting the "official" peer review.

We are in the process of validating the NEED for the subject proposed work.
I spoke to Charlie yesterday regarding the subject and possible options for SREL which I would be glad to share with you and Mark when I'm in DC tomorrow. I have the SES comission at 2:00 PM but available any other time. Please let me know what works for you.
Yvette

From: Jeffrey Allison
Sent: 03/28/2007 04:32 PM EDT
To: Yvette Collazo
Cc: William (Bill) Spader

Please respond to Steve. Thank you.
----- Forwarded by Jeffrey Allison/DOE/Srs on 03/28/2007 04:31 PM -----

"Cuevas, Steven"
<Steven.Cuevas@em
.doe.gov>

03/28/2007 03:21
PM

To
"Allison, Jeffrey (SRS)"
<jeffrey.allison@srs.gov>

cc
"Bartlett, Dirk"
<Dirk.Bartlett@hq.doe.gov>

Subject

Jeff

Has SREL submitted and proposals for peer review and if so, where are they in the process?

Thanks.

SJC

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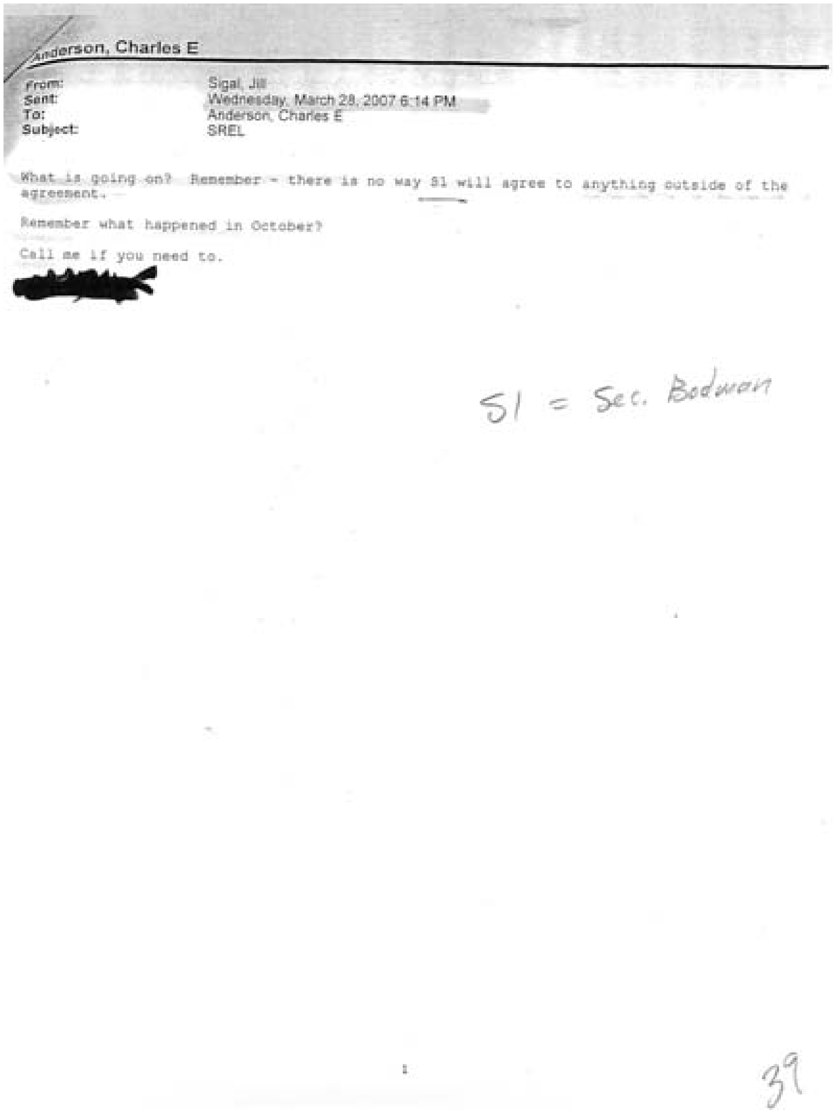

Anderson, Charles E

From: Sigal, Jill
Sent: Wednesday, March 28, 2007 6:14 PM
To: Anderson, Charles E
Subject: SREL

What is going on? Remember - there is no way S1 will agree to anything outside of the agreement.

Remember what happened in October?

Call me if you need to.

[redacted]

S1 = Sec. Bodman

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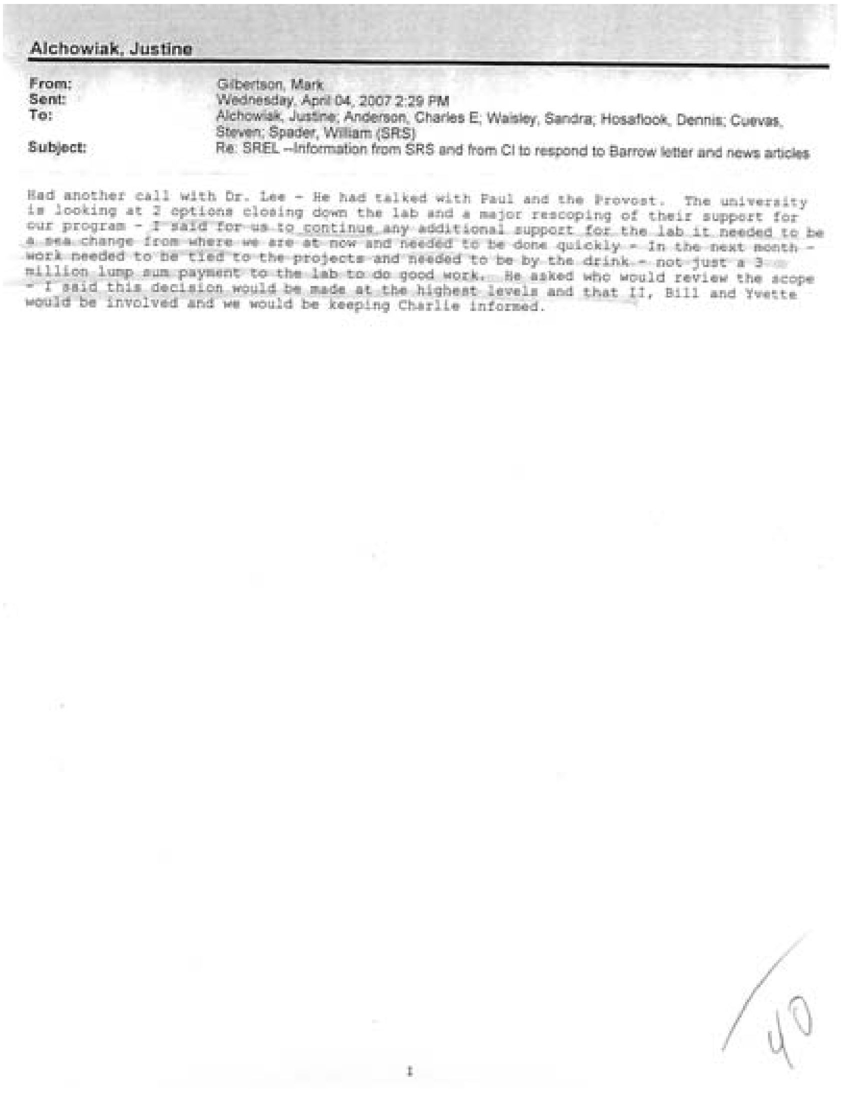

Alchowiak, Justine

From:	Gilbertson, Mark
Sent:	Wednesday, April 04, 2007 2:29 PM
To:	Alchowiak, Justine; Anderson, Charles E; Walsley, Sandra; Hosaflook, Dennis; Cuevas, Steven; Spader, William (SRS)
Subject:	Re: SREL --Information from SRS and from CI to respond to Barrow letter and news articles

Had another call with Dr. Lee - He had talked with Paul and the Provost. The university is looking at 2 options closing down the lab and a major rescoping of their support for our program - I said for us to continue any additional support for the lab it needed to be a sea change from where we are at now and needed to be done quickly - In the next month - work needed to be tied to the projects and needed to be by the drink - not just a 3 million lump sum payment to the lab to do good work. He asked who would review the scope - I said this decision would be made at the highest levels and that II, Bill and Yvette would be involved and we would be keeping Charlie informed.

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"Paul Bertsch"
<Bertsch@srel.edu>
04/04/2007 10:30 AM

To <Yvette.Collazo@srs.gov>
cc "Carl Strojan" <Strojan@srel.edu>
bcc
Subject Re: Fwd: Re: a budget question

Yvette,

I understand that you will be unable to meet with me tomorrow. Mark Gilbertson spoke with David Lee, VP-Research at UGA yesterday. While we have no specifics the message was not good. I have attached an impact statement so you are aware of the issues facing DOE in the event that SREL will have insufficient funding to operate.

Also, Mark stated that they had been trying for years to get SREL's work refocused on short term projects focused on the highest priorities in EM. This is odd, since the only guidance that I have ever received from DOE-HQ was in a memorandum dated June 27, 2005 from EM-2 (Charles E. Anderson) to the SRS manager (Jeffrey M. Allison) stating "SREL is important to the Environmental Management (EM) Program and other Department of Energy (DOE) program offices. Research projects will be conducted to address DOE needs as related to cleanup, stewardship, SRS end state, and potential new SRS missions". The memo went on to state "In addition, DOE-SRS is requested to prepare a new cooperative agreement that begins July, 2006 to establish a framework for future SREL activities".

We started work on the defining the work scope for the CA beginning in August of 2005 based on this guidance and developed, what I and those in Karen Hooker's organization felt was a very balanced portfolio based on the four areas listed (cleanup, stewardship, SRS end state, and potential new SRS missions) in the memo. Our CA complete with work scope was submitted to DOE in February of 2006 and we never received feedback or direction to focus on short-term projects until very recently. Mr. Allison and Mr. Spader have verbally mentioned to me, Dr. Lee, and members of the general public that the work SREL does on the SRS is very important to the Department's missions. While we are moving to accommodate the new charge, it is disingenuous even untrue to state that there has been efforts for 2 or more years to get SREL to change their research focus.

Paul

Paul M. Bertsch
Georgia Power Professor of Environmental Chemistry
Department of Crop and Soil Sciences and Director
Savannah River Ecology Laboratory
The University of Georgia
P.O. Drawer E
Aiken, SC 29802

TEL:(803)725-5637; FAX:(803)725-3309
bertsch@srel.edu

For courier service:
Savannah River Ecology Laboratory
Savannah River Site, Bldg 737-A
Aiken, SC 29808

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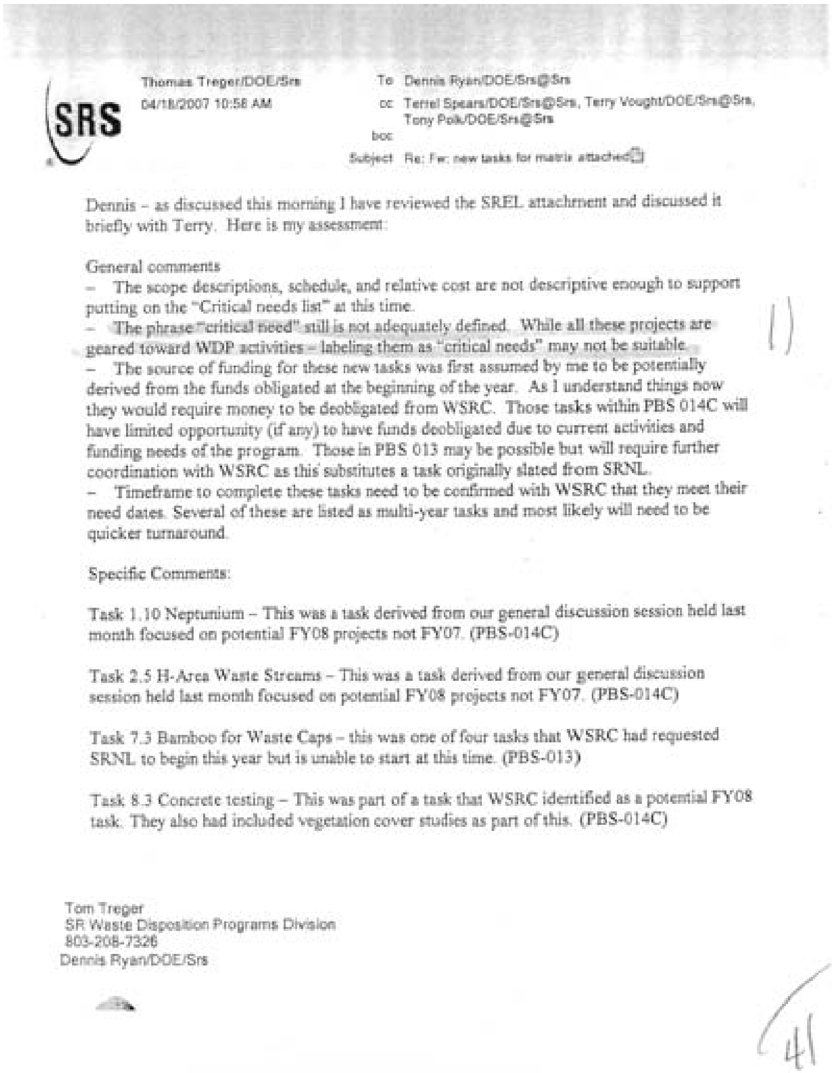

SRS

Thomas Treger/DOE/Srs
04/18/2007 10:58 AM

To Dennis Ryan/DOE/Srs@Srs
cc Terrel Spears/DOE/Srs@Srs, Terry Vought/DOE/Srs@Srs, Tony Polk/DOE/Srs@Srs
bcc
Subject Re: Fw: new tasks for matrix attached

Dennis – as discussed this morning I have reviewed the SREL attachment and discussed it briefly with Terry. Here is my assessment:

General comments
- The scope descriptions, schedule, and relative cost are not descriptive enough to support putting on the "Critical needs list" at this time.
- The phrase "critical need" still is not adequately defined. While all these projects are geared toward WDP activities – labeling them as "critical needs" may not be suitable. 1)
- The source of funding for these new tasks was first assumed by me to be potentially derived from the funds obligated at the beginning of the year. As I understand things now they would require money to be deobligated from WSRC. Those tasks within PBS 014C will have limited opportunity (if any) to have funds deobligated due to current activities and funding needs of the program. Those in PBS 013 may be possible but will require further coordination with WSRC as this substitutes a task originally slated from SRNL.
- Timeframe to complete these tasks need to be confirmed with WSRC that they meet their need dates. Several of these are listed as multi-year tasks and most likely will need to be quicker turnaround.

Specific Comments:

Task 1.10 Neptunium – This was a task derived from our general discussion session held last month focused on potential FY08 projects not FY07. (PBS-014C)

Task 2.5 H-Area Waste Streams – This was a task derived from our general discussion session held last month focused on potential FY08 projects not FY07. (PBS-014C)

Task 7.3 Bamboo for Waste Caps – this was one of four tasks that WSRC had requested SRNL to begin this year but is unable to start at this time. (PBS-013)

Task 8.3 Concrete testing – This was part of a task that WSRC identified as a potential FY08 task. They also had included vegetation cover studies as part of this. (PBS-014C)

Tom Treger
SR Waste Disposition Programs Division
803-208-7326
Dennis Ryan/DOE/Srs

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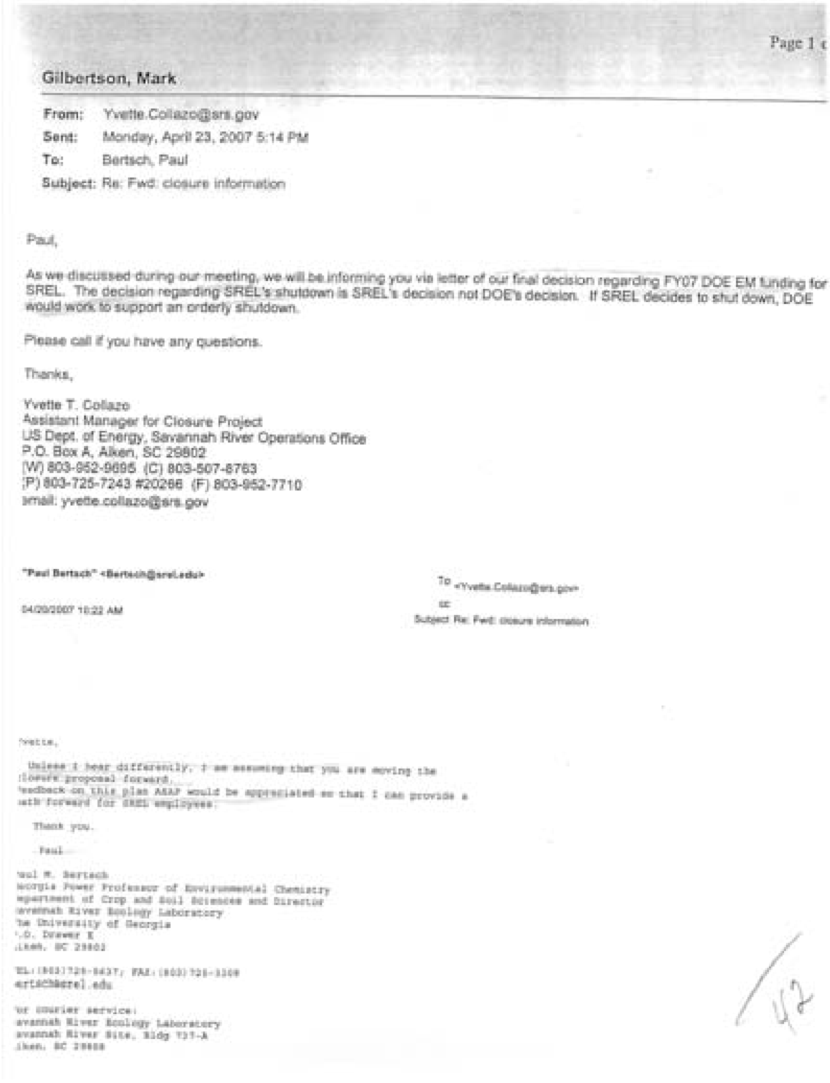

Page 1

Gilbertson, Mark

From: Yvette.Collazo@srs.gov
Sent: Monday, April 23, 2007 5:14 PM
To: Bertsch, Paul
Subject: Re: Fwd: closure information

Paul,

As we discussed during our meeting, we will be informing you via letter of our final decision regarding FY07 DOE EM funding for SREL. The decision regarding SREL's shutdown is SREL's decision not DOE's decision. If SREL decides to shut down, DOE would work to support an orderly shutdown.

Please call if you have any questions.

Thanks,

Yvette T. Collazo
Assistant Manager for Closure Project
US Dept. of Energy, Savannah River Operations Office
P.O. Box A, Aiken, SC 29802
(W) 803-952-9695 (C) 803-507-8763
(P) 803-725-7243 #20266 (F) 803-952-7710
email: yvette.collazo@srs.gov

"Paul Bertsch" <Bertsch@srel.edu>

04/20/2007 10:22 AM

To <Yvette.Collazo@srs.gov>
cc
Subject Re: Fwd: closure information

vette,

Unless I hear differently, I am assuming that you are moving the
losure proposal forward.
eedback on this plan ASAP would be appreciated so that I can provide a
ath forward for SREL employees.

Thank you.

Paul

aul M. Bertsch
eorgia Power Professor of Environmental Chemistry
epartment of Crop and Soil Sciences and Director
avannah River Ecology Laboratory
he University of Georgia
.O. Drawer E
iken, SC 29802

EL:(803)725-5637; FAX:(803)725-3309
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avannah River Ecology Laboratory
avannah River Site, Bldg 737-A
iken, SC 29808

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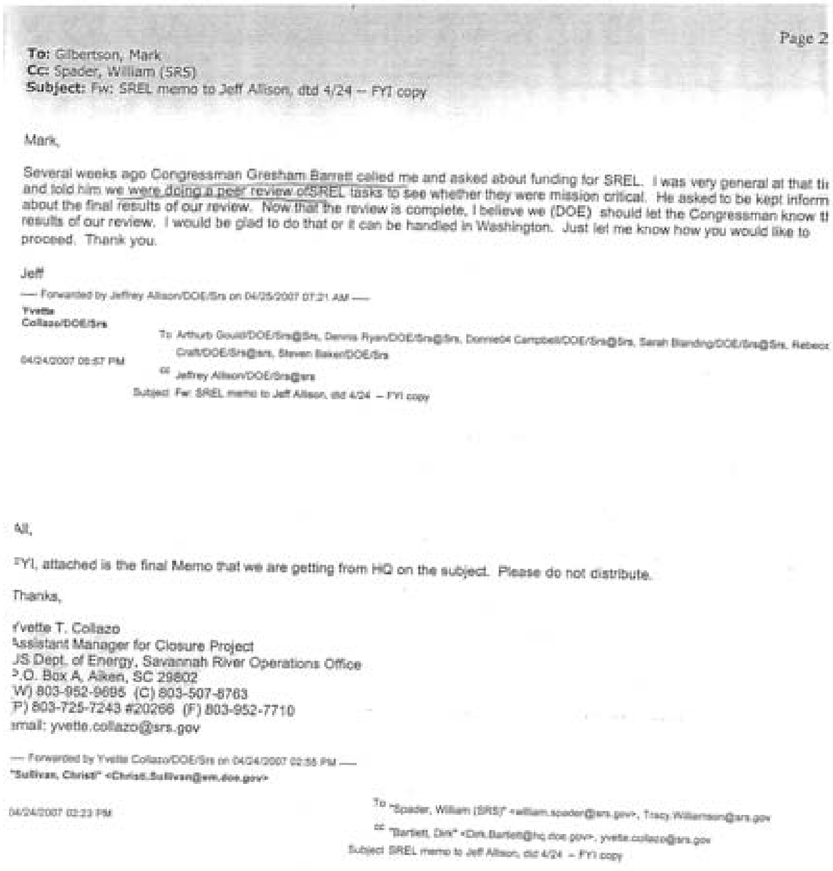

Page 2

To: Gilbertson, Mark
Cc: Spader, William (SRS)
Subject: Fw: SREL memo to Jeff Allison, dtd 4/24 -- FYI copy

Mark,

Several weeks ago Congressman Gresham Barrett called me and asked about funding for SREL. I was very general at that ti and told him we were doing a peer review ofSREL tasks to see whether they were mission critical. He asked to be kept inform about the final results of our review. Now that the review is complete, I believe we (DOE) should let the Congressman know tl results of our review. I would be glad to do that or it can be handled in Washington. Just let me know how you would like to proceed. Thank you.

Jeff

----- Forwarded by Jeffrey Allison/DOE/Srs on 04/25/2007 07:21 AM -----

Yvette Collazo/DOE/Srs

04/24/2007 06:57 PM

To Arthurb Gould/DOE/Srs@Srs, Dennis Ryan/DOE/Srs@Srs, Donnie04 Campbell/DOE/Srs@Srs, Sarah Blanding/DOE/Srs@Srs, Rebecc Craft/DOE/Srs@srs, Steven Baker/DOE/Srs
cc Jeffrey Allison/DOE/Srs@srs
Subject Fw: SREL memo to Jeff Allison, dtd 4/24 -- FYI copy

All,

FYI, attached is the final Memo that we are getting from HQ on the subject. Please do not distribute.

Thanks,

Yvette T. Collazo
Assistant Manager for Closure Project
US Dept. of Energy, Savannah River Operations Office
P.O. Box A, Aiken, SC 29802
(W) 803-952-9695 (C) 803-507-8763
(P) 803-725-7243 #20266 (F) 803-952-7710
email: yvette.collazo@srs.gov

----- Forwarded by Yvette Collazo/DOE/Srs on 04/24/2007 02:55 PM -----

"Sullivan, Christi" <Christi.Sullivan@em.doe.gov>

04/24/2007 02:23 PM

To "Spader, William (SRS)" <william.spader@srs.gov>, Tracy.Williamson@srs.gov
cc "Bartlett, Dirk" <Dirk.Bartlett@hq.doe.gov>, yvette.collazo@srs.gov
Subject SREL memo to Jeff Allison, dtd 4/24 -- FYI copy

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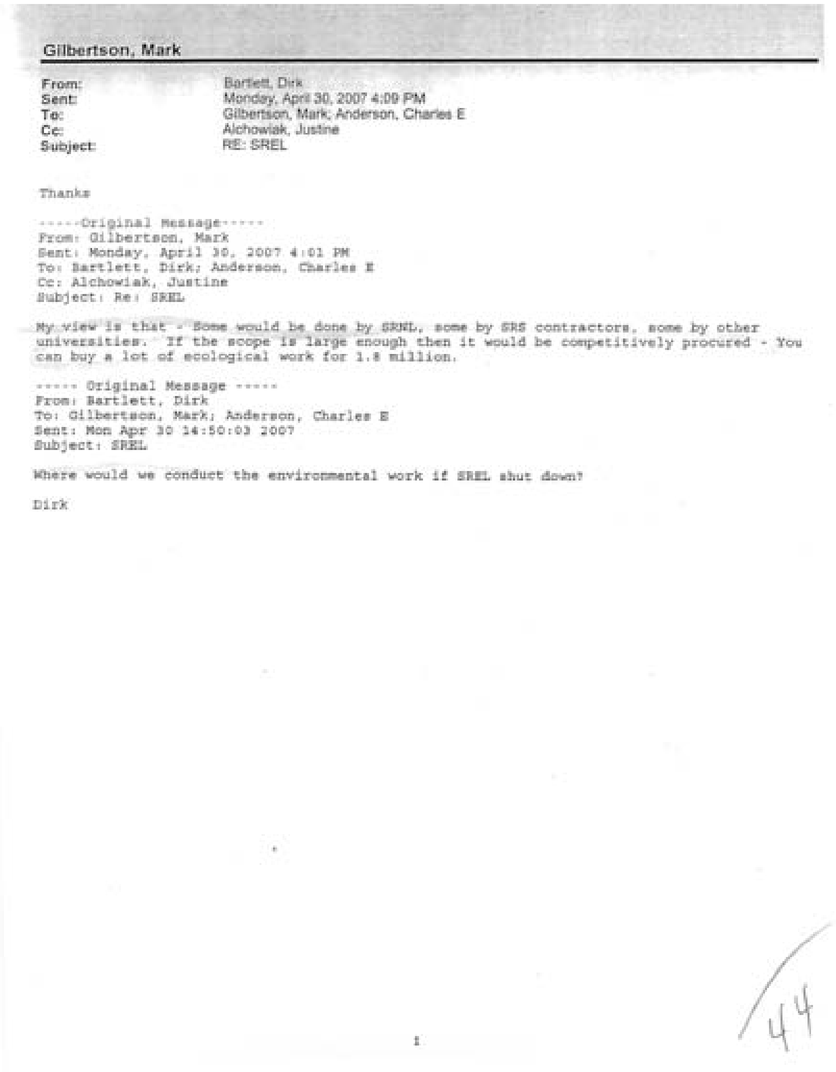

Gilbertson, Mark

From: Bartlett, Dirk
Sent: Monday, April 30, 2007 4:09 PM
To: Gilbertson, Mark; Anderson, Charles E
Cc: Alchowiak, Justine
Subject: RE: SREL

Thanks

-----Original Message-----
From: Gilbertson, Mark
Sent: Monday, April 30, 2007 4:01 PM
To: Bartlett, Dirk; Anderson, Charles E
Cc: Alchowiak, Justine
Subject: Re: SREL

My view is that - Some would be done by SRNL, some by SRS contractors, some by other universities. If the scope is large enough then it would be competitively procured - You can buy a lot of ecological work for 1.8 million.

----- Original Message -----
From: Bartlett, Dirk
To: Gilbertson, Mark; Anderson, Charles E
Sent: Mon Apr 30 14:50:03 2007
Subject: SREL

Where would we conduct the environmental work if SREL shut down?

Dirk

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Page 1 of

Gilbertson, Mark

From: Cuevas, Steven
Sent: Thursday, May 10, 2007 4:12 PM
To: 'james-r.giusti@srs.gov'; Carr, Bobby; Gilbertson, Mark
Cc: rebecca.craft@srs.gov; julie.petersen@srs.gov; Allison, Jeffrey (SRS); Spader, William (SRS)
Subject: RE: Public Information Request on SREL

Do we have such a document? I assume we had some criterion for this?

SJC

From: james-r.giusti@srs.gov [mailto:james-r.giusti@srs.gov]
Sent: Thursday, May 10, 2007 3:05 PM
To: Carr, Bobby; Cuevas, Steven; Gilbertson, Mark
Cc: rebecca.craft@srs.gov; julie.petersen@srs.gov; Allison, Jeffrey (SRS); Spader, William (SRS)
Subject: Public Information Request on SREL

Linda Lee, a graduate student at UGA/SREL, has asked for a copy of the criteria or procedure DOE used to evaluate the SREL proposed project.

Guidance please.

James R. Giusti
Public Affairs Officer
DOE-SR Office Of External Affairs
W: (803) 952-7684
M: (803) 599-0718
F: (803) 952-9523
P: (803) 725-7243 #11289
E: james-r.giusti@srs.gov

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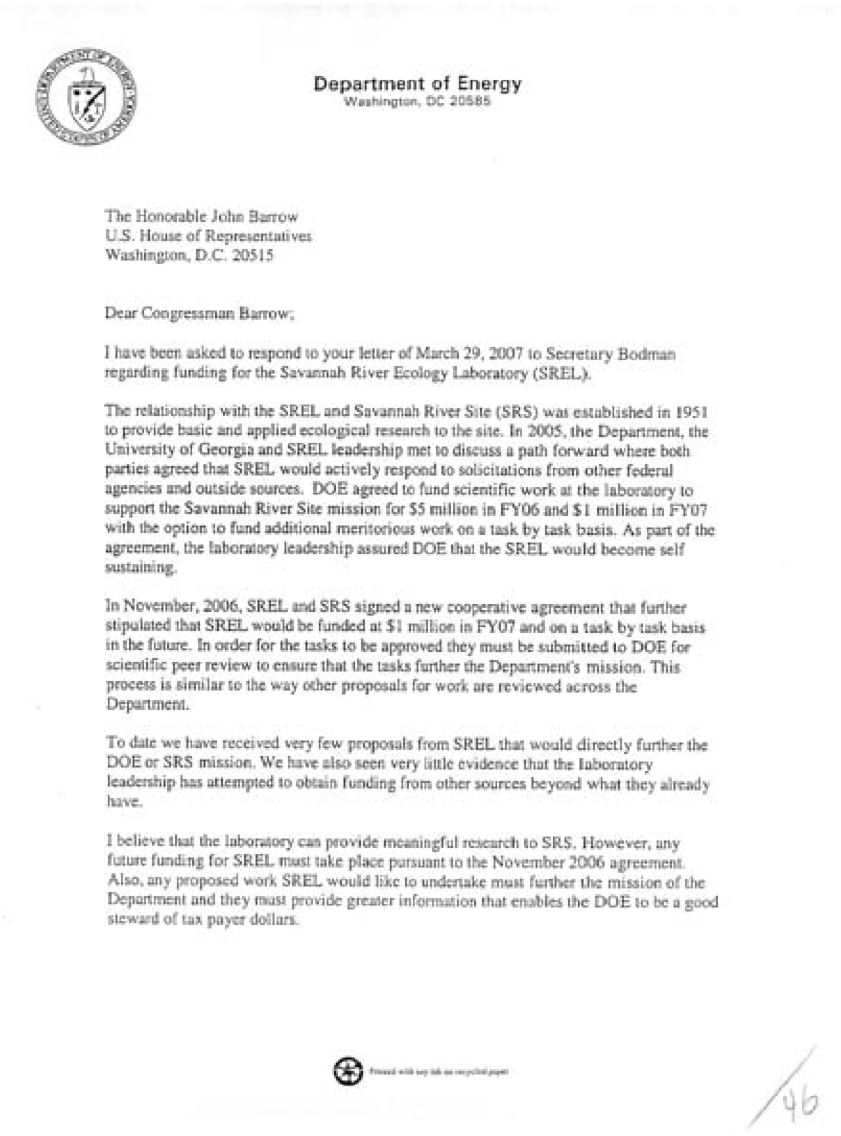

Department of Energy
Washington, DC 20585

The Honorable John Barrow
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Barrow;

I have been asked to respond to your letter of March 29, 2007 to Secretary Bodman regarding funding for the Savannah River Ecology Laboratory (SREL).

The relationship with the SREL and Savannah River Site (SRS) was established in 1951 to provide basic and applied ecological research to the site. In 2005, the Department, the University of Georgia and SREL leadership met to discuss a path forward where both parties agreed that SREL would actively respond to solicitations from other federal agencies and outside sources. DOE agreed to fund scientific work at the laboratory to support the Savannah River Site mission for $5 million in FY06 and $1 million in FY07 with the option to fund additional meritorious work on a task by task basis. As part of the agreement, the laboratory leadership assured DOE that the SREL would become self sustaining.

In November, 2006, SREL and SRS signed a new cooperative agreement that further stipulated that SREL would be funded at $1 million in FY07 and on a task by task basis in the future. In order for the tasks to be approved they must be submitted to DOE for scientific peer review to ensure that the tasks further the Department's mission. This process is similar to the way other proposals for work are reviewed across the Department.

To date we have received very few proposals from SREL that would directly further the DOE or SRS mission. We have also seen very little evidence that the laboratory leadership has attempted to obtain funding from other sources beyond what they already have.

I believe that the laboratory can provide meaningful research to SRS. However, any future funding for SREL must take place pursuant to the November 2006 agreement. Also, any proposed work SREL would like to undertake must further the mission of the Department and they must provide greater information that enables the DOE to be a good steward of tax payer dollars.

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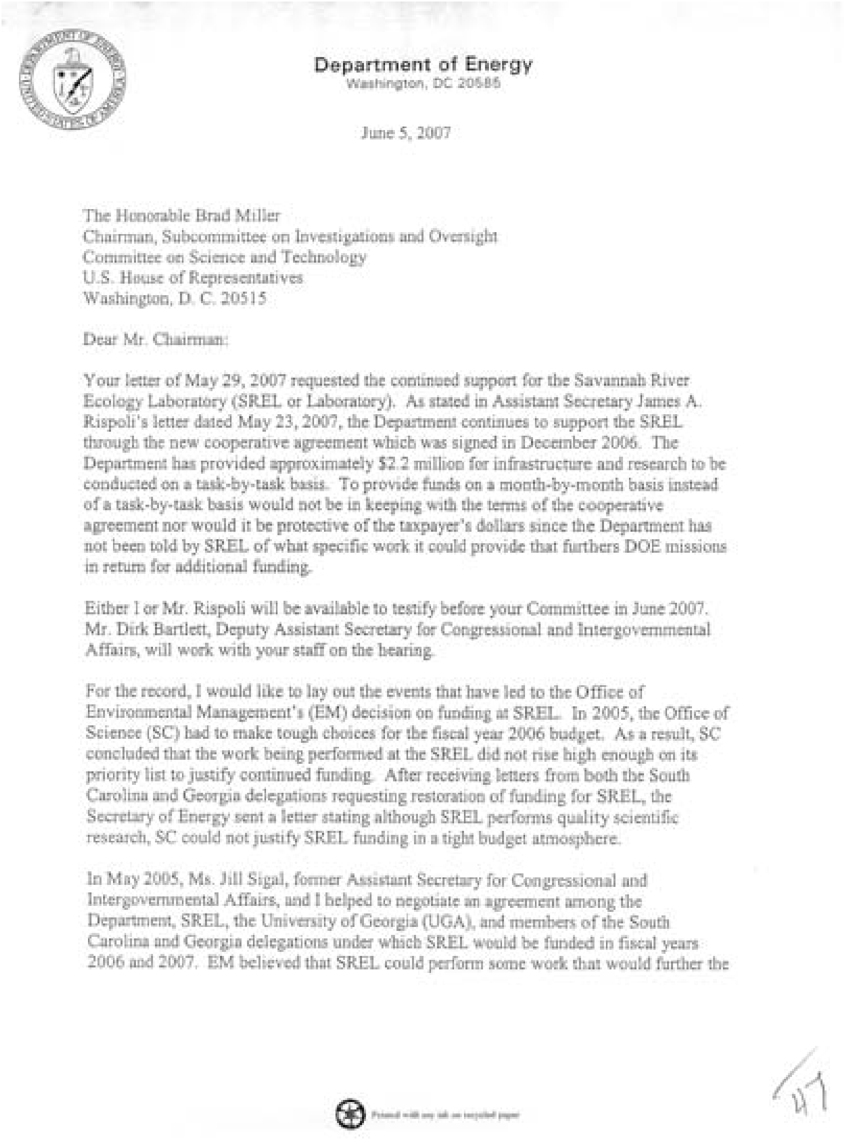
Should you have any questions please feel free to call me at 202-586-7709 or Mr. Dirk Bartlett, Deputy Assistant Secretary, in the Office of Congressional and Intergovernmental Affairs at 202-586-5450.

Sincerely,

JA Rispoli

James A. Rispoli
Assistant Secretary for
Environmental Management



Department of Energy
Washington, DC 20585

June 5, 2007

The Honorable Brad Miller
Chairman, Subcommittee on Investigations and Oversight
Committee on Science and Technology
U.S. House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

Your letter of May 29, 2007 requested the continued support for the Savannah River Ecology Laboratory (SREL or Laboratory). As stated in Assistant Secretary James A. Rispoli's letter dated May 23, 2007, the Department continues to support the SREL through the new cooperative agreement which was signed in December 2006. The Department has provided approximately $2.2 million for infrastructure and research to be conducted on a task-by-task basis. To provide funds on a month-by-month basis instead of a task-by-task basis would not be in keeping with the terms of the cooperative agreement nor would it be protective of the taxpayer's dollars since the Department has not been told by SREL of what specific work it could provide that furthers DOE missions in return for additional funding.

Either I or Mr. Rispoli will be available to testify before your Committee in June 2007. Mr. Dirk Bartlett, Deputy Assistant Secretary for Congressional and Intergovernmental Affairs, will work with your staff on the hearing.

For the record, I would like to lay out the events that have led to the Office of Environmental Management's (EM) decision on funding at SREL. In 2005, the Office of Science (SC) had to make tough choices for the fiscal year 2006 budget. As a result, SC concluded that the work being performed at the SREL did not rise high enough on its priority list to justify continued funding. After receiving letters from both the South Carolina and Georgia delegations requesting restoration of funding for SREL, the Secretary of Energy sent a letter stating although SREL performs quality scientific research, SC could not justify SREL funding in a tight budget atmosphere.

In May 2005, Ms. Jill Sigal, former Assistant Secretary for Congressional and Intergovernmental Affairs, and I helped to negotiate an agreement among the Department, SREL, the University of Georgia (UGA), and members of the South Carolina and Georgia delegations under which SREL would be funded in fiscal years 2006 and 2007. EM believed that SREL could perform some work that would further the

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mission of the Savannah River Site (SRS). In fiscal year 2006, the Department provided approximately $5 million from various Program Offices within the Department and an additional $1 million in fiscal year 2007 for infrastructure from EM with additional funds to be provided on a task-by-task basis. As part of the agreement, SREL would become self-sustaining in fiscal year 2007 and the delegations would seek to have language earmarking additional funds for SREL removed from the House Energy and Water Development Appropriations Report for fiscal year 2006. Additionally, in the fiscal year 2006 timeframe, SREL submitted four proposals to SC to three competitive solicitations; however, none of these proposals were funded. SC has not received any proposals in fiscal year 2007.

In March 2006, the Savannah River Operations Office (SR) initiated discussions concerning a renewal of the non-competitive agreement with the University of Georgia for the Savannah River Ecology Laboratory. That same month, SR sent Dr. Paul Bertsch, the Director of SREL, a letter indicating SR's plans to fund SREL at $4 million for fiscal year 2007. SR was not in a position to guarantee any funding above the $1 million level for fiscal year 2007 as the Department did not have a funding mechanism in place for SREL in fiscal year 2007 and had not received the fiscal year 2007 appropriations. Further, SR project managers had not been consulted to determine work that was needed to support the EM mission for fiscal year 2007. In December 2006, SR and UGA signed the new cooperative agreement which guaranteed $1 million in fiscal year 2007 to support infrastructure and additional funding to be provided on a task-by-task basis as determined by merit, EM programmatic need, and funding availability. SREL identified 27 research tasks. These were evaluated by SR site personnel and only six tasks were determined to meet a critical DOE project need. SREL was then notified that EM funding for fiscal year 2007 would be capped at $1,805,000, which included the agreed upon $1 million for infrastructure. The National Nuclear Security Administration (NNSA) at SR provided an additional $435,000 in fiscal year 2007. Last fall, NNSA requested that SREL submit proposals for work to support the Mixed Oxide (MOX) Fuel Fabrication Project, but SREL independently made the decision not to pursue the work and did not submit any proposals to NNSA. A few weeks ago, NNSA again initiated discussions with SREL and requested proposals to support this effort and has finally received proposals this week. These proposals are undergoing review in NNSA.

Although SREL is located on the Savannah River Site, the Department does not manage this Laboratory. The University of Georgia (UGA) manages this Laboratory and the Department expected the University to take a leadership role in setting the course for this Laboratory for the future. The Department is a customer of the Laboratory just like other governmental entities such as the U.S. Department of the Interior, U.S. Environmental Protection Agency, National Science Foundation, and the U.S. Department of Commerce. I am very disappointed that the SREL and UGA leadership has not been able to make the Laboratory self-sustaining as they had assured the Department in May 2005.

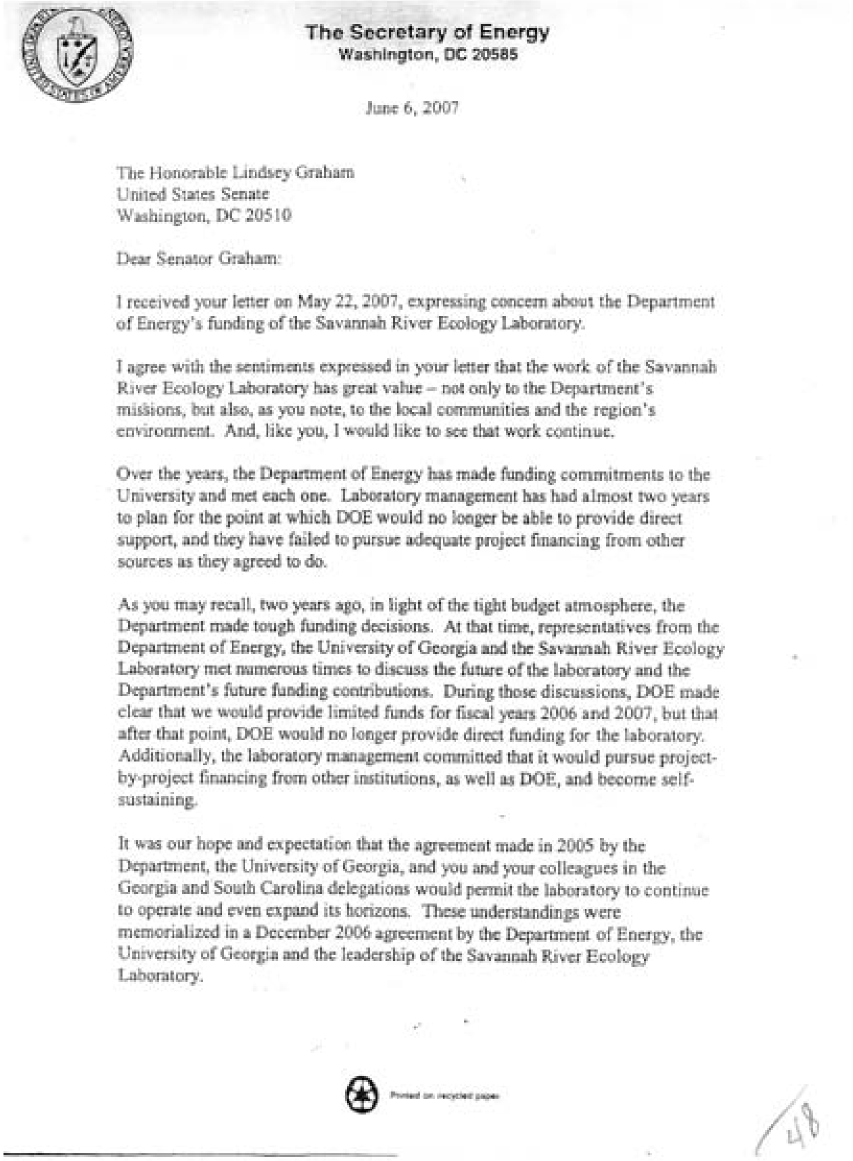
At this time, the Department is continuing to work with the University of Georgia on this issue. In fact, the Department met with representatives from the University of Georgia on May 29, 2007 to discuss potential paths forward. I was disappointed that given the "funding crisis" at SREL, UGA did not come to the meeting with concrete plans on how it will move forward to refocus SREL so that it can be self-sustaining. During a phone call with Secretary Bodman on June 1, 2007, UGA President Michael F. Adams committed to providing the Department with a plan for the future of the laboratory in two weeks time. The Department will continue to honor its commitment as laid out in the cooperative agreement signed in December 2006.

If you have further questions, please contact me or Mr. Dirk Bartlett, Deputy Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Charles E. Anderson

Charles E. Anderson
Principal Deputy Secretary
For Environmental Management



The Secretary of Energy
Washington, DC 20585

June 6, 2007

The Honorable Lindsey Graham
United States Senate
Washington, DC 20510

Dear Senator Graham:

I received your letter on May 22, 2007, expressing concern about the Department of Energy's funding of the Savannah River Ecology Laboratory.

I agree with the sentiments expressed in your letter that the work of the Savannah River Ecology Laboratory has great value – not only to the Department's missions, but also, as you note, to the local communities and the region's environment. And, like you, I would like to see that work continue.

Over the years, the Department of Energy has made funding commitments to the University and met each one. Laboratory management has had almost two years to plan for the point at which DOE would no longer be able to provide direct support, and they have failed to pursue adequate project financing from other sources as they agreed to do.

As you may recall, two years ago, in light of the tight budget atmosphere, the Department made tough funding decisions. At that time, representatives from the Department of Energy, the University of Georgia and the Savannah River Ecology Laboratory met numerous times to discuss the future of the laboratory and the Department's future funding contributions. During those discussions, DOE made clear that we would provide limited funds for fiscal years 2006 and 2007, but that after that point, DOE would no longer provide direct funding for the laboratory. Additionally, the laboratory management committed that it would pursue project-by-project financing from other institutions, as well as DOE, and become self-sustaining.

It was our hope and expectation that the agreement made in 2005 by the Department, the University of Georgia, and you and your colleagues in the Georgia and South Carolina delegations would permit the laboratory to continue to operate and even expand its horizons. These understandings were memorialized in a December 2006 agreement by the Department of Energy, the University of Georgia and the leadership of the Savannah River Ecology Laboratory.

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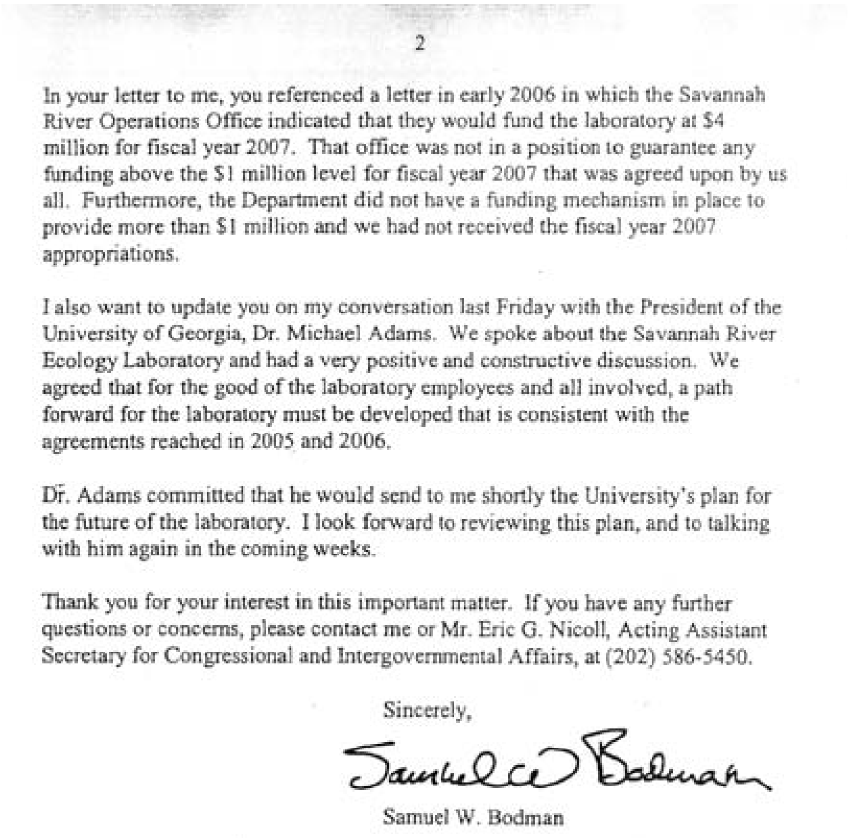


In your letter to me, you referenced a letter in early 2006 in which the Savannah River Operations Office indicated that they would fund the laboratory at $4 million for fiscal year 2007. That office was not in a position to guarantee any funding above the $1 million level for fiscal year 2007 that was agreed upon by us all. Furthermore, the Department did not have a funding mechanism in place to provide more than $1 million and we had not received the fiscal year 2007 appropriations.

I also want to update you on my conversation last Friday with the President of the University of Georgia, Dr. Michael Adams. We spoke about the Savannah River Ecology Laboratory and had a very positive and constructive discussion. We agreed that for the good of the laboratory employees and all involved, a path forward for the laboratory must be developed that is consistent with the agreements reached in 2005 and 2006.

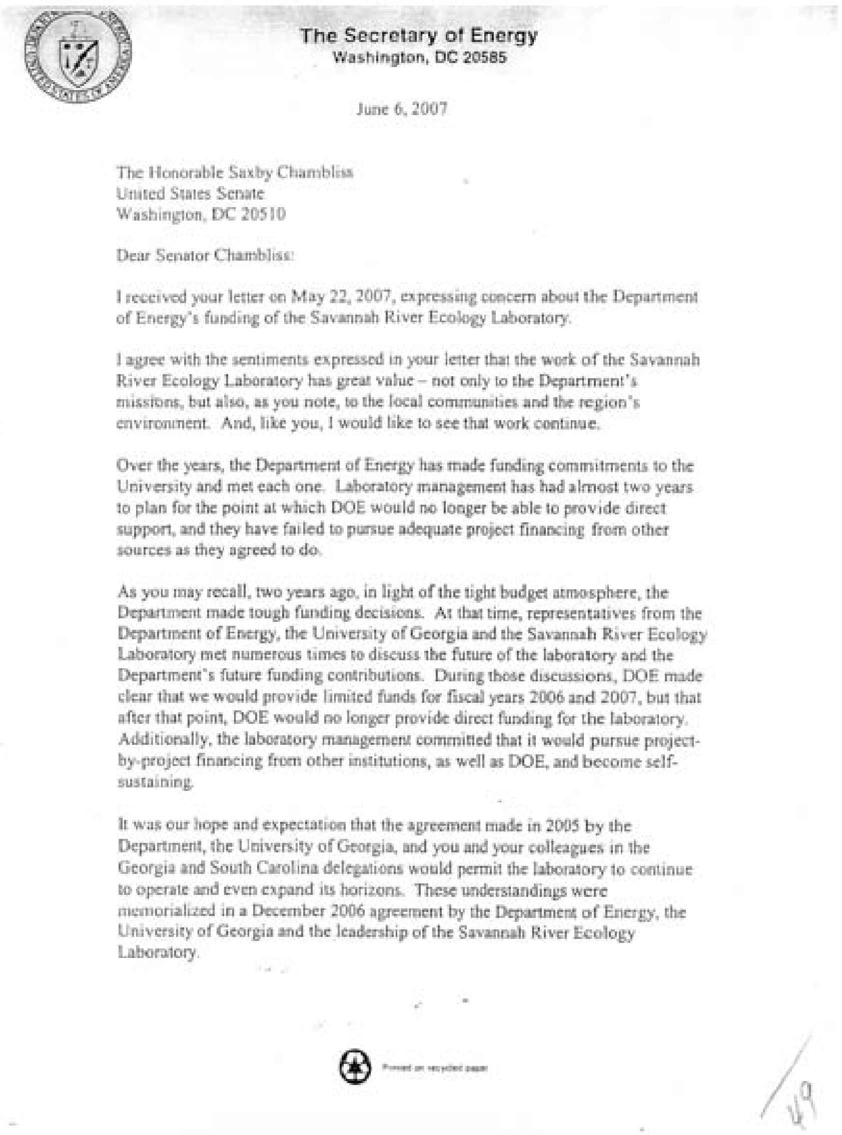
Dr. Adams committed that he would send to me shortly the University's plan for the future of the laboratory. I look forward to reviewing this plan, and to talking with him again in the coming weeks.

Thank you for your interest in this important matter. If you have any further questions or concerns, please contact me or Mr. Eric G. Nicoll, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Samuel W Bodman

Samuel W. Bodman



The Secretary of Energy
Washington, DC 20585

June 6, 2007

The Honorable Saxby Chambliss
United States Senate
Washington, DC 20510

Dear Senator Chambliss:

I received your letter on May 22, 2007, expressing concern about the Department of Energy's funding of the Savannah River Ecology Laboratory.

I agree with the sentiments expressed in your letter that the work of the Savannah River Ecology Laboratory has great value – not only to the Department's missions, but also, as you note, to the local communities and the region's environment. And, like you, I would like to see that work continue.

Over the years, the Department of Energy has made funding commitments to the University and met each one. Laboratory management has had almost two years to plan for the point at which DOE would no longer be able to provide direct support, and they have failed to pursue adequate project financing from other sources as they agreed to do.

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It was our hope and expectation that the agreement made in 2005 by the Department, the University of Georgia, and you and your colleagues in the Georgia and South Carolina delegations would permit the laboratory to continue to operate and even expand its horizons. These understandings were memorialized in a December 2006 agreement by the Department of Energy, the University of Georgia and the leadership of the Savannah River Ecology Laboratory.

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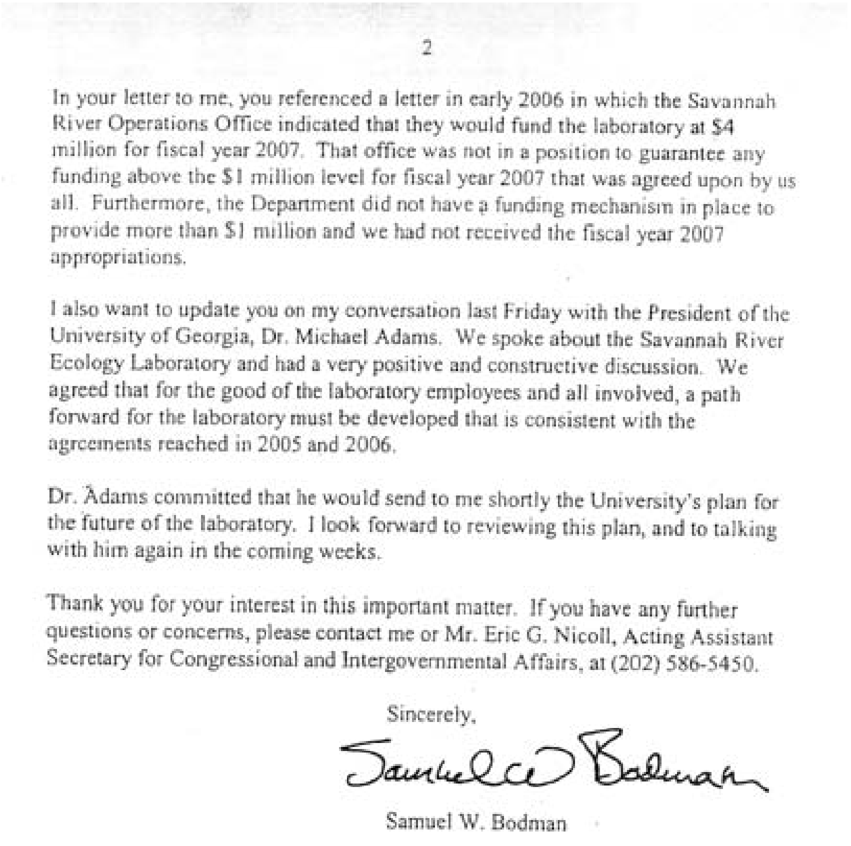

In your letter to me, you referenced a letter in early 2006 in which the Savannah River Operations Office indicated that they would fund the laboratory at $4 million for fiscal year 2007. That office was not in a position to guarantee any funding above the $1 million level for fiscal year 2007 that was agreed upon by us all. Furthermore, the Department did not have a funding mechanism in place to provide more than $1 million and we had not received the fiscal year 2007 appropriations.

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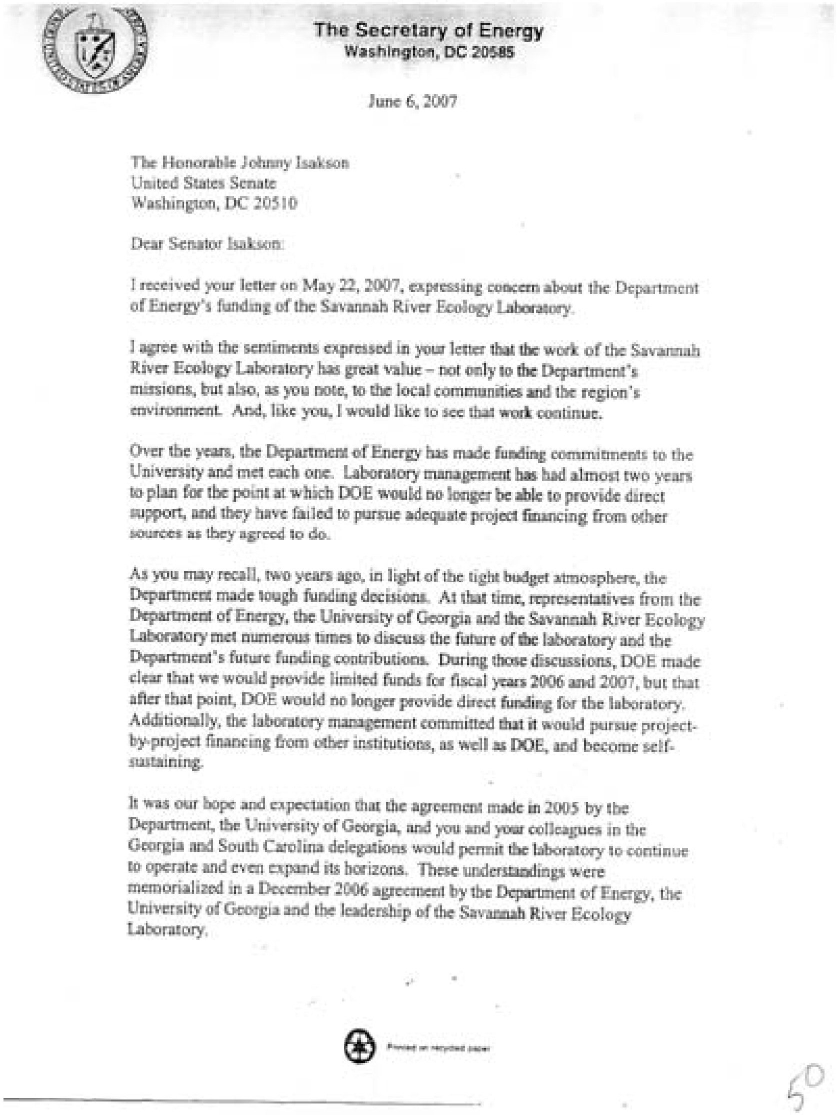
Dr. Adams committed that he would send to me shortly the University's plan for the future of the laboratory. I look forward to reviewing this plan, and to talking with him again in the coming weeks.

Thank you for your interest in this important matter. If you have any further questions or concerns, please contact me or Mr. Eric G. Nicoll, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Samuel W Bodman

Samuel W. Bodman



The Secretary of Energy
Washington, DC 20585

June 6, 2007

The Honorable Johnny Isakson
United States Senate
Washington, DC 20510

Dear Senator Isakson:

I received your letter on May 22, 2007, expressing concern about the Department of Energy's funding of the Savannah River Ecology Laboratory.

I agree with the sentiments expressed in your letter that the work of the Savannah River Ecology Laboratory has great value – not only to the Department's missions, but also, as you note, to the local communities and the region's environment. And, like you, I would like to see that work continue.

Over the years, the Department of Energy has made funding commitments to the University and met each one. Laboratory management has had almost two years to plan for the point at which DOE would no longer be able to provide direct support, and they have failed to pursue adequate project financing from other sources as they agreed to do.

As you may recall, two years ago, in light of the tight budget atmosphere, the Department made tough funding decisions. At that time, representatives from the Department of Energy, the University of Georgia and the Savannah River Ecology Laboratory met numerous times to discuss the future of the laboratory and the Department's future funding contributions. During those discussions, DOE made clear that we would provide limited funds for fiscal years 2006 and 2007, but that after that point, DOE would no longer provide direct funding for the laboratory. Additionally, the laboratory management committed that it would pursue project-by-project financing from other institutions, as well as DOE, and become self-sustaining.

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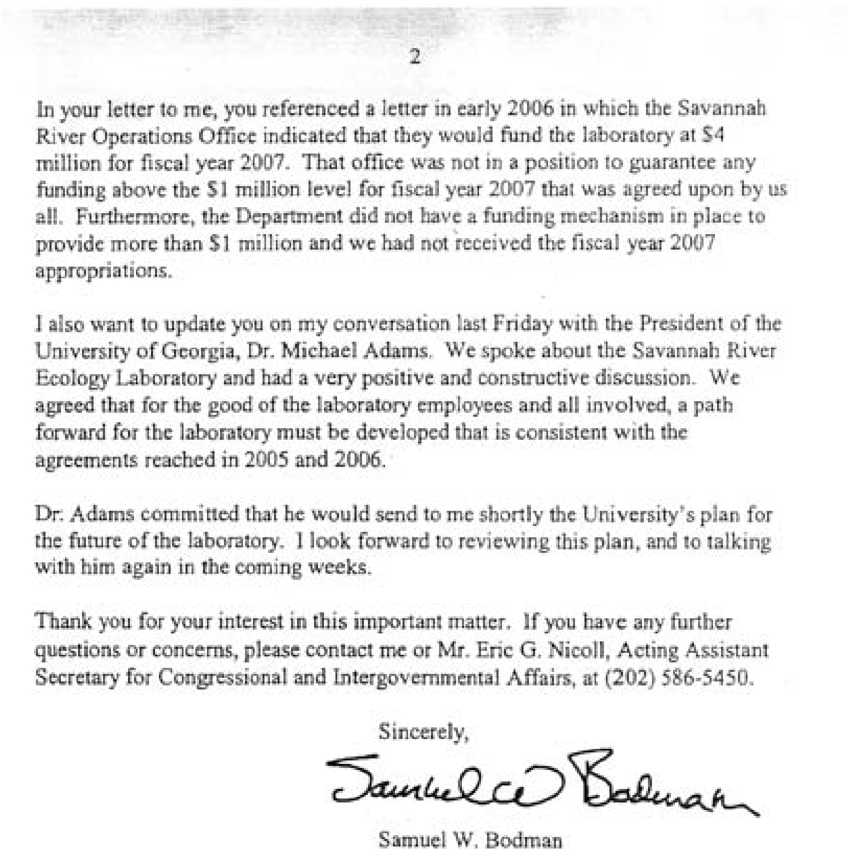

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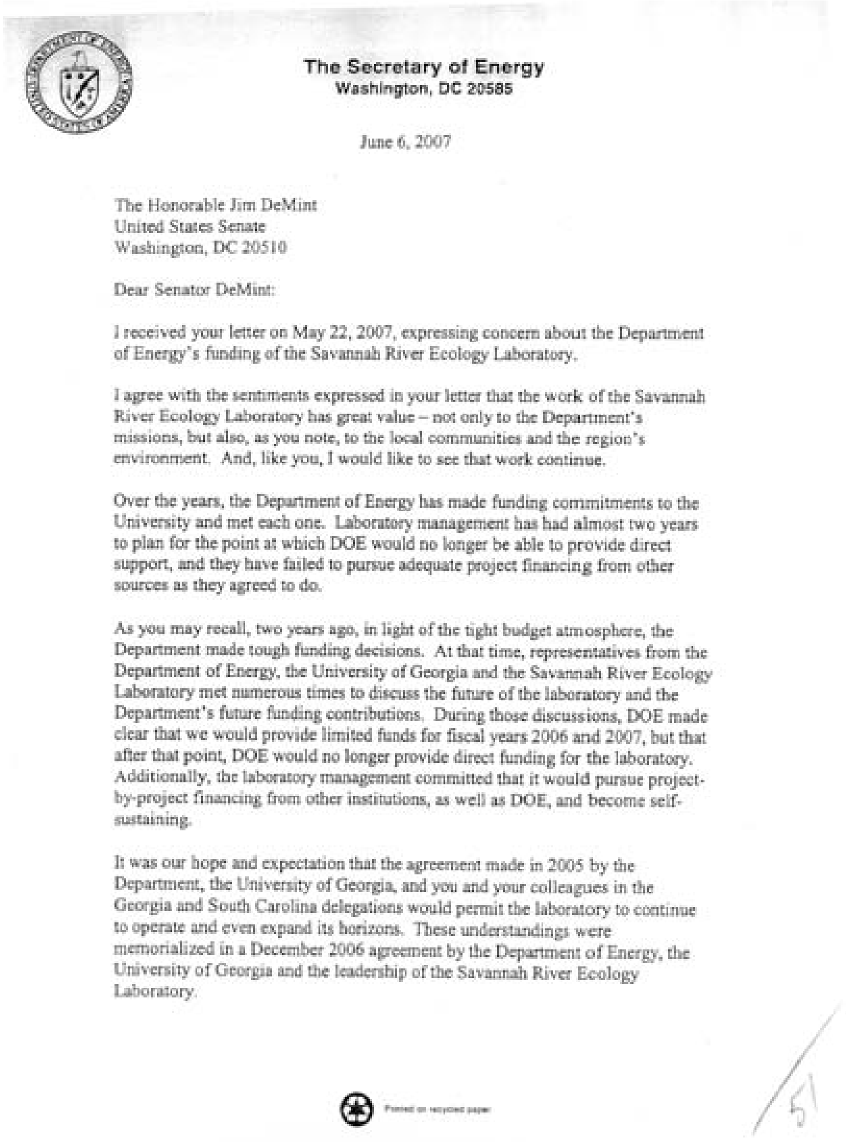
Thank you for your interest in this important matter. If you have any further questions or concerns, please contact me or Mr. Eric G. Nicoll, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Samuel W Bodman

Samuel W. Bodman



The Secretary of Energy
Washington, DC 20585

June 6, 2007

The Honorable Jim DeMint
United States Senate
Washington, DC 20510

Dear Senator DeMint:

I received your letter on May 22, 2007, expressing concern about the Department of Energy's funding of the Savannah River Ecology Laboratory.

I agree with the sentiments expressed in your letter that the work of the Savannah River Ecology Laboratory has great value – not only to the Department's missions, but also, as you note, to the local communities and the region's environment. And, like you, I would like to see that work continue.

Over the years, the Department of Energy has made funding commitments to the University and met each one. Laboratory management has had almost two years to plan for the point at which DOE would no longer be able to provide direct support, and they have failed to pursue adequate project financing from other sources as they agreed to do.

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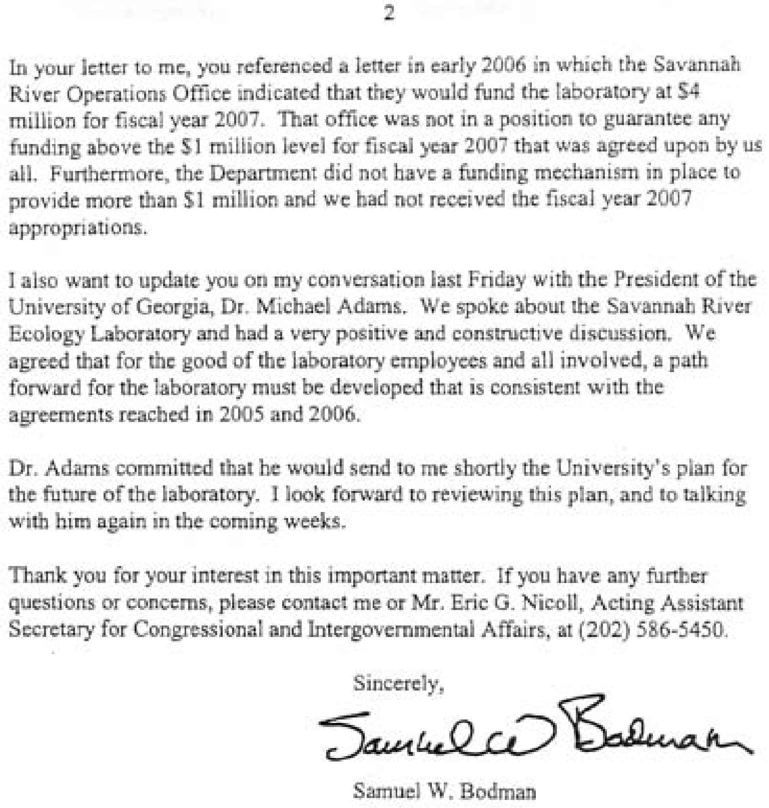

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Thank you for your interest in this important matter. If you have any further questions or concerns, please contact me or Mr. Eric G. Nicoll, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Samuel W Bodman

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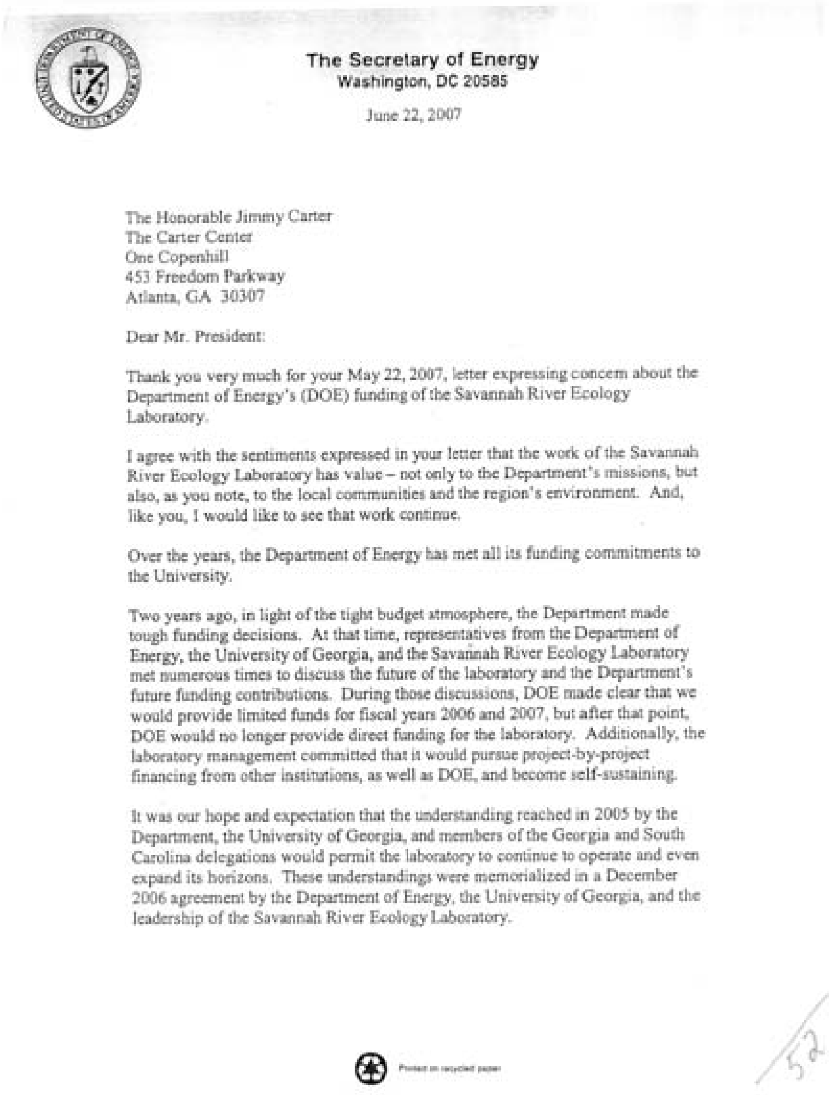

The Secretary of Energy
Washington, DC 20585

June 22, 2007

The Honorable Jimmy Carter
The Carter Center
One Copenhill
453 Freedom Parkway
Atlanta, GA 30307

Dear Mr. President:

Thank you very much for your May 22, 2007, letter expressing concern about the Department of Energy's (DOE) funding of the Savannah River Ecology Laboratory.

I agree with the sentiments expressed in your letter that the work of the Savannah River Ecology Laboratory has value – not only to the Department's missions, but also, as you note, to the local communities and the region's environment. And, like you, I would like to see that work continue.

Over the years, the Department of Energy has met all its funding commitments to the University.

Two years ago, in light of the tight budget atmosphere, the Department made tough funding decisions. At that time, representatives from the Department of Energy, the University of Georgia, and the Savannah River Ecology Laboratory met numerous times to discuss the future of the laboratory and the Department's future funding contributions. During those discussions, DOE made clear that we would provide limited funds for fiscal years 2006 and 2007, but after that point, DOE would no longer provide direct funding for the laboratory. Additionally, the laboratory management committed that it would pursue project-by-project financing from other institutions, as well as DOE, and become self-sustaining.

It was our hope and expectation that the understanding reached in 2005 by the Department, the University of Georgia, and members of the Georgia and South Carolina delegations would permit the laboratory to continue to operate and even expand its horizons. These understandings were memorialized in a December 2006 agreement by the Department of Energy, the University of Georgia, and the leadership of the Savannah River Ecology Laboratory.

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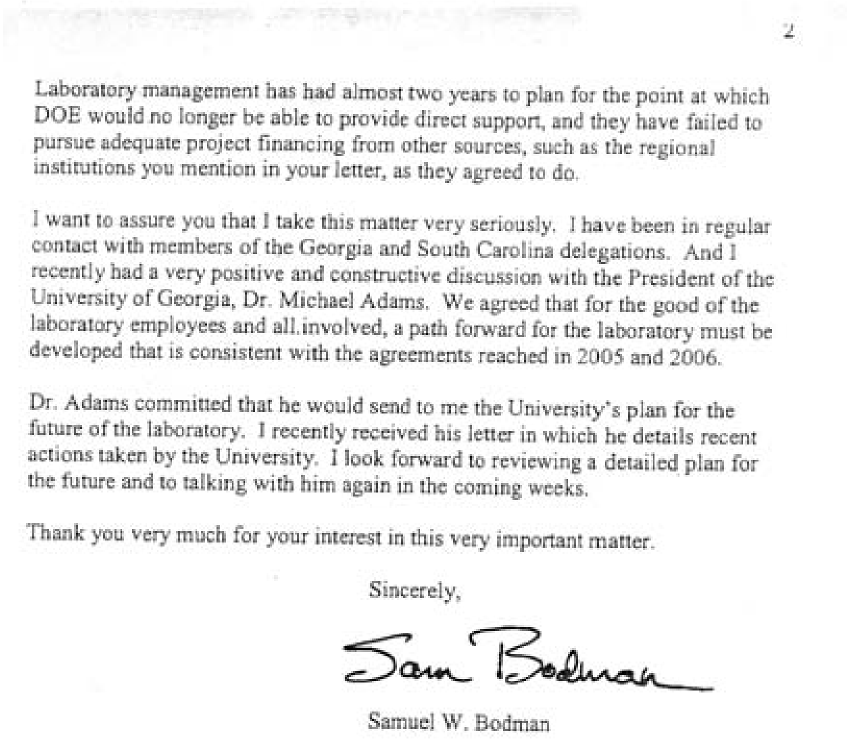


Laboratory management has had almost two years to plan for the point at which DOE would no longer be able to provide direct support, and they have failed to pursue adequate project financing from other sources, such as the regional institutions you mention in your letter, as they agreed to do.

I want to assure you that I take this matter very seriously. I have been in regular contact with members of the Georgia and South Carolina delegations. And I recently had a very positive and constructive discussion with the President of the University of Georgia, Dr. Michael Adams. We agreed that for the good of the laboratory employees and all involved, a path forward for the laboratory must be developed that is consistent with the agreements reached in 2005 and 2006.

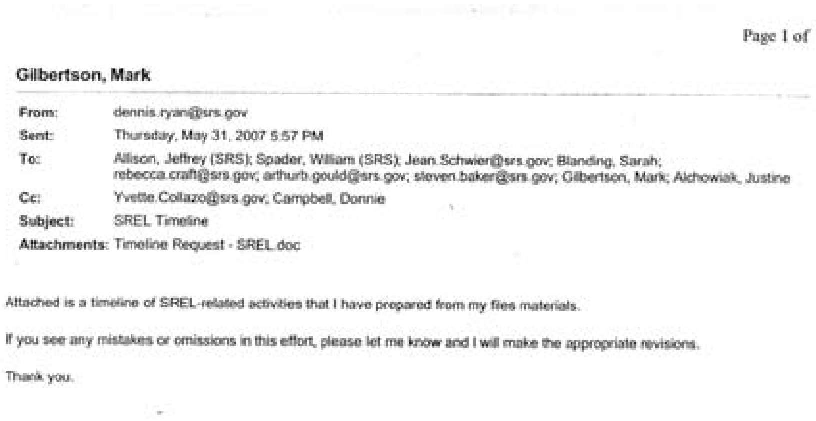
Dr. Adams committed that he would send to me the University's plan for the future of the laboratory. I recently received his letter in which he details recent actions taken by the University. I look forward to reviewing a detailed plan for the future and to talking with him again in the coming weeks.

Thank you very much for your interest in this very important matter.

Sincerely,

Sam Bodman

Samuel W. Bodman



Page 1 of

Gilbertson, Mark

From: dennis.ryan@srs.gov
Sent: Thursday, May 31, 2007 5:57 PM
To: Allison, Jeffrey (SRS); Spader, William (SRS); Jean.Schwier@srs.gov; Blanding, Sarah; rebecca.craft@srs.gov; arthurb.gould@srs.gov; steven.baker@srs.gov; Gilbertson, Mark; Alchowiak, Justine
Cc: Yvette.Collazo@srs.gov; Campbell, Donnie
Subject: SREL Timeline
Attachments: Timeline Request - SREL.doc

Attached is a timeline of SREL-related activities that I have prepared from my files materials.

If you see any mistakes or omissions in this effort, please let me know and I will make the appropriate revisions.

Thank you.

DRAFT
Savannah River Ecology Laboratory (SREL) Cooperative Agreement Timeline

05-07-07	DOE-SR Manager to SREL Director letter informing him that DOE-EM funding for FY 2007 will be capped at $1,805,000.
04-24-07	EM-20 memorandum to DOE-SR Manager recommends that EM FY 2007 funding for SREL be capped at $1,805,000.
04-19-07	Meeting among DOE-HQ, DOE-SR, and SREL personnel to discuss SREL FY 2007 research matrix.
04-18-07	E-mail from DOE-SR AM Closure Project (AMCP) staff to DOE-SR AMCP reports that none of the four separately identified SREL subtasks met critical DOE needs (based on discussions with DOE-SR AM Waste Disposition Project technical staff).
04-18-07	Letter from the DOE-SR to the Director of SREL responding letter of March 9, 2007, from SREL expressing concerns about the administration of the SREL cooperative agreement.
04-17-06	E-mail from DOE-SR Environmental Quality Management Division (EQMD) staff to DOE-SR AM for Waste Disposition Project (AMWDP) requested a line organization review on four additional SREL research subtasks that were developed following a meeting among SREL researchers and AMWDP staff.
04-11-07	Letter from the Assistant Secretary for Environmental Management to Congressman John Barrow responding to a March 29, 2007, letter from Congressman Barrow to the Secretary of Energy regarding funding for SREL.
03-30-07	E-mail from DOE-SR EQMD staff (based on discussions with DOE-SR AMWDP, AM for Nuclear Materials Stabilization [AMMSP], and AMCP technical staffs) reports that only six of the 23 SREL identified research subtasks met critical DOE needs.
03-28-07	E-mail from DOE-SR EQMD staff transmitting revised SREL FY 2007 Research Matrix to DOE-SR line organizations (based on discussions with DOE-SR AMWDP, AMNMSP, and AMCP technical staffs). This matrix included a column identifying whether or not the identified research project met a critical DOE need.
03-09-07	Letter from the SREL Director to DOE-SR identifying concerns about the administration of the SREL cooperative agreement.
02-20-07	EM-20 conference call with DOE-SR emphasizes "critical DOE need" test for SREL work.

01-29-07	EM-20 to DOE-SR Manager memorandum stating their intent to conduct a peer review for scientific merit of SREL research. DOE-SR would then conduct a relevancy review (i.e., meeting of site needs) and determine if the work could be supported within SRS PBSs.
11-30-06	DOE-SR Manager signs new DOE/UGARF cooperative agreement for SREL.
11-29-06	DOE-SR personnel transmit a draft FY 2007 SREL scope of work matrix to EM-20.
11-16-06	Personnel from the DOE-SR meet with SREL line organizations to discuss SREL task/subtask activities, costs, and drivers.
10-31-06	Director of SREL and staff meet with DOE-SR line management to discuss SREL FY 2007 research activities.
11-27-06	Second SR 72 – Hour Prior Notification to the Office of Congressional & Intergovernmental Affairs.
10-24-06	DOE-SR transmits SREL Scope of Work for EM to DOE-SR Assistant Managers along with the 2006 SREL Annual Technical Progress Report.
09-28-06	SREL receives a second no-cost extension for the SREL cooperative agreement until December 30, 2006.
09-25-06	First SR 72 – Hour Prior Notification to the Office of Congressional & Intergovernmental Affairs.
04-03-06	SREL requests a no-cost extension for the SREL cooperative agreement until September 30, 2006.
03-31-06	Letter from the DOE-SR Manager to the SREL Director reaffirming that SR plans to fund $4 million dollars for SREL operations in FY 2007.
02-23-06	The University of Georgia Research Foundation (UGARF) signs their proposal for the draft follow-on cooperative agreement and submits it to DOE-SR.
02-06-06	Letter from DOE-SR to the UGARF Executive Vice President requests application for the follow-on agreement at FY 2006 funding level.
07-01-05	Letter from DOE-SR Manager informs the SREL Director of DOE intent to fund SREL at $4.3 million in FY 2006 and initiate a renewal of the cooperative agreement.
06-28-05	The Augusta Chronicle reports that DOE agreed to provide $4,300,000 in funds to keep SREL operating through June 2006.
06-27-05	Memo from EM-2 to DOE-SR Manager, "Support for the SREL" • FY 2006 funding $3,000,000 from EM, $1,000,000 from SC, $300,000 from NNSA. EM funds for applied research in environmental

characterization; ecological risks and effects; and remediation restoration.

- DOE-SR is requested to prepare a new cooperative agreement that begins July 2006 to establish the framework for future SREL activities.

06-24-05	SREL submits Workforce Restructuring Plan to meet a DOE base funding level of $4.5 million.
04-22-05	Letter from the Secretary to Senator Jim DeMint responding to the Senator's March 21, 2005, letter concerning DOE funding for SREL.
03-12-05	The Augusta Chronicle reports on Secretary Samuel W. Bodman's first visit to SRS. Senator Graham announced his commitment to restore funding for SREL.
02-10-05	The Augusta Chronicle reports DOE's proposed FY 2006 budget eliminates funding for SREL. The Office of Science funded SREL in FY 2003 ($6.8 million), FY 2004 ($7.6 million), and FY 2005 ($7.7 million). SREL had requested $7,748,000 for FY 2006.

○